Identifying Factors Influencing the Recruitment and Retention of Primary Care Doctors in Kuwait

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Abstract

Background and aim: Primary care is widely considered the cornerstone of health systems. Stronger primary care services have been shown to improve the population's health and improve health service delivery. Increasing the availability, quality, and accessibility of the primary care workforce is considered a milestone to improving primary care services. This thesis aims to understand the factors influencing recruitment and retention of primary care doctors and their career intentions in Kuwait. This aim was fulfilled by reviewing the existing literature and understanding the factors at play internationally affecting recruitment and retention, and by exploring the intentions and motivators for leaving clinical practice among current practising primary care doctors in Kuwait.

Methods: This research adopted a mixed-methods approach, integrating the results of a systematic review, quantitative, and qualitative studies. The Systems Theory Framework for Career Development (STF) was used as a theoretical model. The systematic review of the literature concerning the recruitment and retention of primary care doctors was conducted from 2000 to 2019 and analysed using thematic analysis guided by the STF. In the second study, a cross-sectional survey was distributed in twenty-five randomly selected primary care centres in Kuwait. In addition to descriptive analysis, Chi-Square tests and logistic regression analyses were conducted, and the STF was used to analyse the open question answers. In the qualitative study, participants were recruited from respondents to the quantitative study and purposeful sampling was used to select twenty primary care doctors for interview. The interviews were analysed using thematic analysis guided by the STF.

Results: In the systematic review, almost 15,000 articles were screened and 65 papers were eligible for qualitative synthesis. The cross-sectional survey was returned by 191 participants giving a response rate of 80.9%. All three studies showed that increase in age is associated with leaving or intending to leave primary care. In the systematic review and qualitative interviews, ill health was linked to leaving primary care. Some values, including those related to the doctor-patient relationship, can have a dual effect of improving recruitment but jeopardising retention. The systematic review showed that work-life balance has a significant effect on both recruitment and retention. While the systematic review showed that job autonomy could improve recruitment and retention, the interviews found a mixed effect of job autonomy on retention.

Both the systematic review and the cross-sectional study showed that increased job satisfaction could positively affect retention. The qualitative study also identified that medical school experiences influence recruitment; however, the systematic review yielded mixed evidence about the role of medical schools. Continuing professional development (CPD) activities were shown to improve retention in both the systematic review and qualitative study. The survey's results demonstrated that having a family medicine or primary care qualification was associated with the intention of working for more than five years in primary care. While the systematic review and interviews showed that the perception that primary care is compatible with family life and family opinion could affect recruitment, both studies also showed that retention could be negatively affected by family responsibilities. The systematic review showed that both recruitment and retention could be affected by peer relationships and opinions, but the interviews demonstrated mixed evidence for the effect of peers. All of the studies showed that the perceived high workload was associated with leaving primary care, and the systematic review and interviews reported that working hours could positively or negatively affect GPs' recruitment. In the systematic review, the work environment had both positive and negative effects on recruitment and retention; in the interviews, work environment had a negative effect on retention. Although both the systematic review and qualitative interviews showed doctors' passion for interacting with patients could improve recruitment, the increase in patient demands was an influencing factor for leaving primary in the systemic review. Both the systematic review and interviews showed the impact of political decisions on recruitment and retention. All of the studies demonstrated evidence related to geographical location and its effect on retention.

Conclusion: The findings show that the recruitment and retention of primary care doctors is a multi-factorial phenomenon, in which personal, social, and societal-environmental factors can all have an effect. This PhD contributes to the evidence by giving a perspective on the factors affecting recruitment and retention in Kuwait. It concludes with implications for policy to improve recruitment and retention in Kuwait which may have international relevance, and with recommendations for future research.

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My deepest gratitude to my family, my parents, sisters and brother who supported and encouraged me during my whole life and in my abroad education journey. I would like to thank and dedicate this work to my grandmother, whom I wish she was here with me when finishing this journey.

Last but not least, I would like to thank my wife and my daughters for standing beside me all of these years; thank you for your support, encouragement, patience, and your belief in me.

Declaration

I, Abdulaziz Alhenaidi, declare that I am the sole author of this thesis. I was responsible for planning, designing, and conducting all aspects of this research under the supervision of Professor Catherine O'Donnell and Professor Jillian Morrison. I declare that all the material presented in this thesis is my own work unless specifically stated otherwise.

Publications and Presentations

- Alhenaidi, A, O'Donnell, C, and Morrison, J. 2021, *Factors Influencing Career Intentions of GPs in Kuwait: A Qualitative Study*, Innovation and Resilience in the Time of COVID-19, Annual meeting of Scottish Departments of General Practice (ADEGS) 21 January, (Oral Online Presentation)
- Alhenaidi, A, Morrison, J. and O'Donnell, K. 2020, *Exploring the Career Intentions of Primary Care Doctors in Kuwait: A Questionnaire Survey*, Society of Academic Primary Care (SAPC) Annual Scientific Meeting. 15-17 July, Leeds, United Kingdom. (Oral Presentation)

  Alhenaidi, A, Morrison, J. and O'Donnell, K. 2020, *Why Do Primary Care Doctors Quit Clinical Practice in Kuwait? A Qualitative Study*, Society of Academic Primary Care (SAPC) Annual Scientific Meeting. 15-17 July, Leeds, United Kingdom. (Oral Presentation)
- Alhenaidi, A, O'Donnell, C, and Morrison, J. 2019, *Identifying Factors That Influence the Recruitment or Retention of Family Physicians: A Systematic Review*, Annual Meeting of the North American Primary Care Research Group (NAPCRG). 16-20 November, Toronto, Canada. (Poster Presentation)
- Alhenaidi, A, O'Donnell, C, and Morrison, J. 2019, *Identifying Factors That Influence the Recruitment or Retention of Family Physicians: A Systematic Review*, Society of Academic Primary Care (SAPC) Annual Scientific Meeting. 3-5 July, Exeter, United Kingdom. (Poster Presentation)
- Alhenaidi, A, O'Donnell, C, and Morrison, J. 2019, *Identifying Factors That Influence the Recruitment or Retention of Family Physicians: A Systematic Review*, Primary Care Research: "Promoting Preventive Interventions, Improving the quality of Care". 1-2 December, Doha, Qatar. (Poster Presentation)

Abbreviations

AA	Abdulaziz Alhenaidi
CASP	Critical Appraisal Skills Programme
COD	Catherine A O'Donnell
CPD	Continuous professional development
EMRO	Eastern Mediterranean Regional office of World Health Organisation
FMA	Kuwait Family Medicine Association
GCC	Gulf Cooperation Council
GPs	General Practitioners
IMF	International Monetary Fund
JM	Jillian Morrison
KBFM	Kuwaiti Board of Family Medicine
KIMS	Kuwait Institute for Medical Specializations
KMA	Kuwait Medical Association
K-MOH	Kuwait Ministry of Health
MVLS	College of Medical, Veterinary and Life Sciences
NHS	National Health Services
OECD	The Organisation for Economic Co-operation and Development
PhD	Degree of Doctor of Philosophy
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PROSPERO	International Prospective Register of Systematic Reviews
RCGP	Royal College of General Practitioners
STF	Systems Theory Framework for Career Development
UK	The United Kingdom
UNICEF	United Nations International Children's Emergency Fund
U.S	The United States of America
WHO	World Health Organisation

Chapter One: Introduction

1. Introduction:

This chapter will discuss the international problem of recruitment and retention of primary care doctors in general. It will also present the aims and objectives of this PhD project and an overview of the methodology adopted. The thesis structure will also be presented.

2. The problem of recruitment and retention of primary care doctors:

The shortage of primary care workers, and their recruitment, and retention has troubled global healthcare systems (The Lancet, 2018; Papp *et al.*, 2019). According to the World Health Organisation (WHO) (2018a), the shortage of primary care workers has been noted since the declaration of Alma-Ata and continues till this day. The same report estimated the need for 14.5 million primary health care workers globally by 2030. The workforce crisis has affected low, middle, and high-income countries. Regarding high-income countries, Majeed (2017) cited that both the United States of America (U.S) and the United Kingdom (UK) are suffering from shortages in primary care workers, especially physicians. Other studies support this by showing the shortages in the UK (Ipsos MORI Social Research Institute, 2015; The Health Foundation, 2016) and the US (Bodenheimer and Smith, 2005). According to the Organisation for Economic Co-operation and Development (OECD) (2016), several countries tried to mitigate the shortages by increasing the responsibilities of other health workers, for example nurse practitioners, or encouraging other doctors to enrol in primary care training programs. Serval studies have also described the shortage of primary care workers in low-income countries. For instance, the WHO (2018a) mentioned that East and South Asia and Sub-Saharan Africa are most affected by the shortage of primary care workers. In addition, both Vasan *et al.* (2017) and Karimi-Shahanjarini *et al.* (2019) showed the shortage of primary care workers in low and middle-income countries.

Such a shortage is complicated by the increase in the demand for primary health care services because of population ageing and the rise in chronic illnesses (OECD, 2016). The WHO (2018a) also mentioned other challenges that need to be considered when considering the shortage of primary care doctors, such as migration, shrinking of the labour force, the use of technology in health, and the increase in the populations' knowledge base. Attempts to mitigate such challenges include increasing postgraduate training posts in primary care or developing the roles of nurses and physician assistants (OECD, 2016). However, despite the introduction of these policies and others initiatives, such as financial incentives, to encourage doctors to pursue the primary care path, there has been a decline in the proportion of primary care doctors in the health workforce in the last 20 years (OECD, 2016).

Although the causes of shortages of primary care doctors differ between high and low-income countries, there are also similarities, such as primary care being perceived as a non-prestigious career (Olid *et al.*, 2012), lack of training opportunities or career progression and poor working conditions (Papp *et al.*, 2019). In high-income countries, such as Canada (Scott *et al.*, 2007; Vanasse *et al.*, 2011), U.S (Phillips *et al.*, 2012), and the U.K (Lambert, Smith and Goldacre, 2017) there has been a decrease in the attractiveness of primary care among doctors. High-income countries are also facing a problem in keeping primary care workers in the workforce. For instance, a study in the U.K showed that primary care doctors leave their jobs due to high workload (Leese *et al.*, 2002). A study by Heponiemi *et al.* (2012) showed that doctors leave primary care due to the work-related stress. In a study in multiple European countries, burnout was the main reason for leaving primary care among doctors. Other causes of the shortage in the primary care workforce, which is more obvious in high-income countries, are the ageing of the population leading to the increase in service demand and doctors' retirement (WHO, 2018a).

Causes of shortages in primary care workers in low-income countries differ from those for high-income countries. For example, migration of health workers from low-income countries is among the leading factors of shortages (Cometto *et al.*, 2013; Siyam and Poz, 2014), which is complicated by the policies of high-income countries in attracting doctors to manage the shortages of primary care workers in their countries (Bazemore *et al.*, 2007). Another cause of the deficiency in primary care workers is the lack of training. According to the WHO (2018a), a lack of educators and training infrastructure are among the causes of shortage in the primary care workforce. The same report also cited that the labour market in low-income countries could not employ all health workers, resulting in a complex situation of unmet needs of the health sector and unemployment. The same results on the lack of training were mentioned by Das and Hammer (2014), who cited that the lack of training in low-income countries is negatively affecting the quality of primary care.

Another cause of the shortage of primary care workers is the maldistribution of the workforce. As mentioned by the WHO (2018a), almost all countries suffer from the maldistribution of primary health care workers, either between urban and rural countries or between affluent and poor urban areas. Such results are supported by the OECD (2016) report, which cited the suffering of its members because of health workers' maldistribution. Several other studies also reported the effect of health workers' maldistribution (Bangdiwala *et al.*, 2010; and Al-Shamsi, 2017).

Since the focus of this PhD project is Kuwait, I will present an overview of the primary care workforce in Arab countries. Several studies identified a lack of interest among medical students in primary care as a speciality.

Studies in Saudi Arabia (Al-Faris *et al.*, 1996; Al-Faris *et al.*, 1997; Abdulghani *et al.*, 2013; Alshahrani *et al.*, 2014), United Arab Emirates (Schiess *et al.*, 2015), and Jordan (Khader *et al.*, 2008) showed that primary care was among the least desired specialities by medical students. According to Abyad et al. (2007), the lack of primary care staff is the main obstacle facing the establishment of primary care services in the Middle East, with most Middle Eastern countries dependent on a non-citizen workforce, which is estimated to be 5% to 10% of the total number of health workers in Middle Eastern countries. The same authors also mentioned the need to improve primary care doctors' training. Primary care is also struggling in Arab countries in terms of its definition and its scope of practice, which affects the workforce (Osman, Romani and Hlais, 2011), with the suggestion of limiting practice in the field to only those who are qualified in primary care (Nashat *et al.*, 2020). According to the WHO Regional Office for the Eastern Mediterranean (EMRO) (2018), Gulf Cooperation Council (GCC) countries , which includes Kuwait, are facing hurdles related to the health workforce, mainly the reliance and high turnover of expatriate workers, shortage of national workers, and their limited ability to produce health workers. In 2015, most GCC countries, except Bahrain, had a shortage of primary care doctors with the number of doctors per 10,000 of population rates below the recommended international standard (Qidwai and Wajid2019). According to Mirza, Ardakani, and Salah (2019), Middle East countries face a shortage of family physicians due to the lack of coordination between health ministries and educational institutes, lack of community awareness and demand for family physicians, and the unclear professional path for family physicians. The same authors mentioned that in 22 countries of the Eastern Mediterranean, 90-97% of primary health care facilities are managed by GPs who do not have specialised training in primary care or family medicine. Kuwait is in the same position as these countries, and the details of Kuwait's recruitment and retention crisis will be discussed in chapter (3).

The definition and different terminology used for primary care will be discussed in detail in chapter 3, but for the sake of clarification, it will be discussed briefly here. Different terminologies have been used for physicians working in primary care. For instance, in the UK and several European countries, General Practitioner (GP) describes doctors working in general practice and primary care. In the U.S and Canada, family physician is the term used to describe the same physicians. In Kuwait, family physicians refer to doctors who graduated from The Kuwaiti Board of Family Medicine (KBFM) and general practitioners to describe doctors working in primary care but without a family medicine or primary care qualification. For the purposes of this thesis, the terminology I will use is ‘primary care doctors’, except when I am reporting on findings in my systematic review when I will sometimes use the language of the included papers or in some quotes mentioned by participants in the interviews.

3. Aims and objectives:

This PhD project aims to understand the factors influencing recruitment and retention of primary care doctors and examine the current situation in Kuwait concerning primary care doctors' career intentions. The objectives of this PhD project are:

- To review the existing literature and understand the factors at play internationally with respect to recruitment and retention of primary care doctors in urban settings.
- To explore the intentions of leaving clinical practice among the current practising primary care doctors.
- To investigate the motivators of primary care doctors to leave clinical practice.

As explained earlier in the previous section, and as will be further discussed in chapters 2 and 3, Kuwait is experiencing a recruitment and retention crisis of primary care doctors. While the Ministry of Health is concerned about recruiting more primary care doctors to Kuwait, there is a particular recognition and focus on ensuring retention of primary care doctors already working in Kuwait. The first objective explored the factors underlying both the recruitment and retention of primary care doctors. This was considered relevant as some factors that play a role in primary care doctors' recruitment, such as anticipation of the work environment and compatibility with family life, might be reasons for leaving primary care. Therefore, recruitment factors were included in the first objective to have a better explanation of such factors. The second and third objectives – which were addressed by the fieldwork undertaken in Kuwait - were focused more on the factors that affect primary care doctors' retention in Kuwait itself. This was felt to be more pertinent to the current situation in Kuwait, as the system tries to address ways of keeping doctors in primary care.

Throughout this project, a comparison between Kuwaiti and non-Kuwaiti doctors will be conducted. Such a comparison was driven by the fact that non-Kuwaiti doctors account for approximately 60% of the current primary care workforce. Non-Kuwaiti doctors experience different work environments, different remuneration rules, and different educational rules, all of which may impact on their retention in ways that are different from Kuwaiti doctors. As no work has been conducted exploring the views and career intentions of non-Kuwaiti doctors, it was felt important to include them in this work. Understanding their views and intentions more clearly will also help shape recommendations for recruitment and retention of primary care doctors in Kuwait.

4. Methodological approach:

This PhD project adopted a mixed methods approach. To fulfil the first objective, a systematic review of the literature was conducted. A quantitative cross-sectional survey was distributed in selected primary care centres

in Kuwait to meet the second objective. The third objective was achieved by conducting a qualitative study using semi-structured interviews with primary care doctors recruited from the cross-sectional study.

5. Thesis structure:

This thesis has eight chapters. The first chapter is an introduction, an overview of the studied problem, and a general explanation of the project aims and objectives. The second chapter presents an overview of Kuwait's geographical, economic, and political aspects and explains the Kuwaiti healthcare system. Besides the history and importance of primary care, the third chapter presents the status of the primary care workforce globally. The same chapter also discusses the history and current status of primary care and the primary care workforce in Kuwait.

The fourth chapter presents the methodological approaches adopted in this PhD project. An explanation of mixed methods study designs and the rationale for using them will also be discussed. The same chapter discusses career theories in general, focusing on the STF and the rationale for adopting it in this project. Finally, ethical considerations and confidentiality will also be discussed in chapter four.

The fifth chapter in this thesis presents the systematic review; it will discuss the rationale for adopting it, the methodology used, and the process of applying such a methodological approach. The chapter will also present the results, analysis, and strengths and limitations of the systematic review. The sixth chapter presents the cross-sectional study, the rationale for choosing it in this project, the population studied, and the distribution of surveys. The chapter will also present the results, analysis, and strengths and limitations of the study.

The seventh chapter discusses the qualitative interview study, including its methodology, results and analysis, and its strengths and limitations. The eighth chapter will synthesise the data and results from all of the conducted studies and will discuss the applicability of the STF and suggestions that can improve it for future healthcare research. The same chapter will also present policy implications and future research recommendations.

Chapter Two: State of Kuwait

1. Introduction:

In this chapter, an introduction and overview of Kuwait will be discussed including the country's geographical, economic, and political aspects. The health system of Kuwait will also be explained.

2. Geographical, political, and economic background:

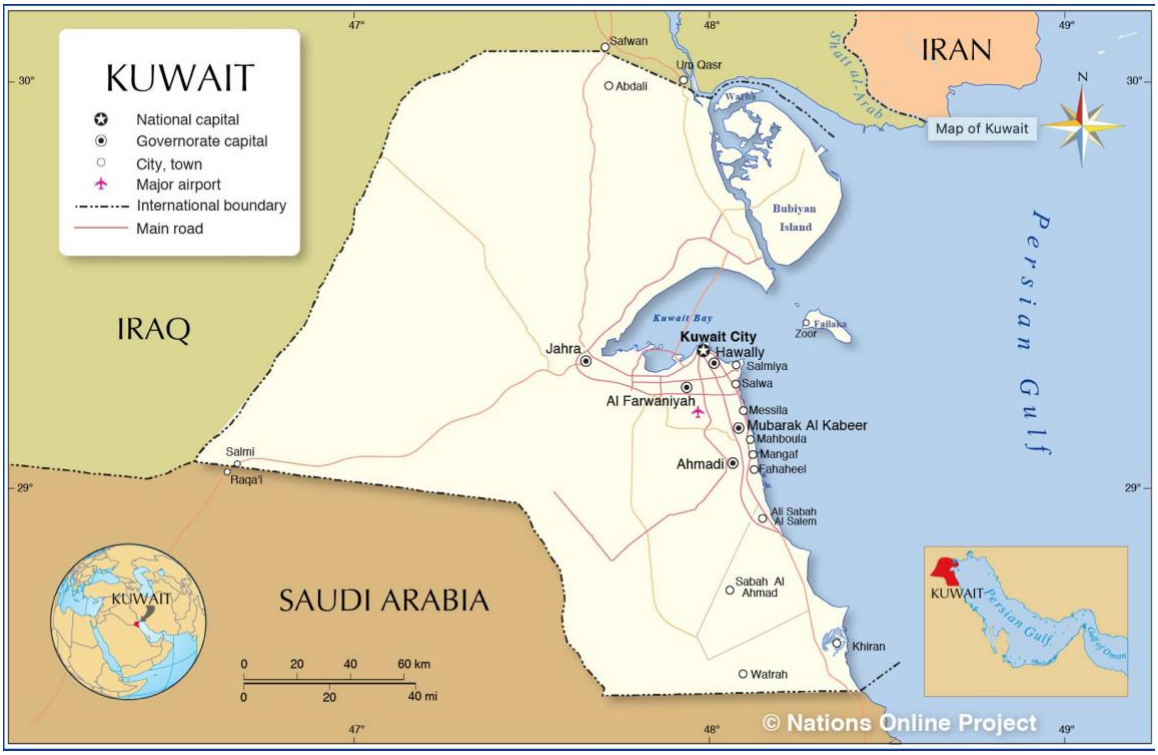
2.1. Geography and climate:

With an area of 17,818 square kilometres, Kuwait is located at the north-western corner of the Persian Gulf (The United States of America (U.S) Government - Library of Congress, 2011). Shaped like a triangle, Kuwait has three borders; it's eastern border is formed by 195 kilometres of the Gulf coast (U.S Government - Library of Congress, 2011). According to the same report, Kuwait's southern and western borders share a 250 kilometres border with Saudi Arabia; and 240 kilometres of the north and part of the western border is shared with Iraq, Figure 1 (U.S Government - Library of Congress, 2011). The climate in Kuwait can be described as desert weather. It is hot and dry in the summer and cold in the winter (U.S Government - Library of Congress, 2011). The average temperature in the summer ranges from 42 to 46 Celsius and in the winter, it can drop to three degrees Celsius.

2.2. Political and bureaucratic system:

The early years of the eighteenth century is considered the period in which a number of families migrated to Kuwait from central Arabia (U.S Government - Library of Congress, 2011). In 1756 the people selected a member of the Al Sabah family to be their leader, and he was succeeded by his son. Since that date, all of the rulers have come from the Al Sabah family, through selection by the family council in consultation with leaders of merchant families and tribes (U.S Government - Library of Congress, 2011).

Figure 1 Kuwait Map, Reproduced From (Nations online project, 2020)



At the end of the nineteenth century Kuwait went under the protection of the British Empire to face the Ottoman forces, and, in 1899, it signed a treaty giving Britain control over Kuwaiti foreign policy in exchange for providing its protection to Kuwait and its ruler (U.S Government - Library of Congress, 2011).

In 1961, the year of Kuwait independence, the settlement between Kuwait and Britain was replaced with a friendship agreement (U.S Government - Library of Congress, 2011). At that time, the Kuwait ruler established the Constituent Assembly to establish the constitution that was then followed by the National Assembly, and the first election was held in 1963 (U.S Government - Library of Congress, 2011). In the reign of the same ruler oil revenues were distributed to the Kuwaiti population through the creation of different social, educational, and health services for (U.S Government - Library of Congress, 2011).

After World War II and with the increase in oil revenues, the Kuwait bureaucratic state started to develop, and after 1938 a cabinet was established under a prime minister (U.S Government - Library of Congress, 2011). Although the prime minister and members of the cabinet are selected by the Amir or head of the state, at least one of the ministers must be from the National Assembly (Regional Health Systems Observatory-EMRO office of WHO, 2006). The Amir has the authority to establish laws, which must be ratified by the National Assembly. In addition, the Kuwait judiciary system is well established, and individuals freedoms are protected by the

constitution, including the freedom of speech and creating unions (Regional Health Systems Observatory-EMRO office of WHO, 2006).

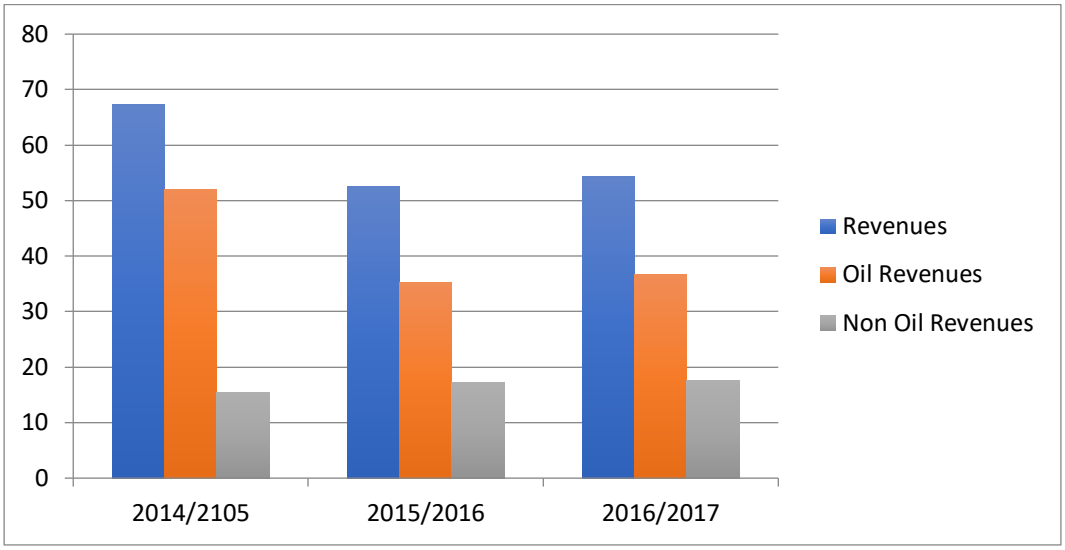
2.3. Economic background:

The geographic location of Kuwait made it the connecting-trading centre between India and the Middle East during the eighteenth and nineteenth century (U.S Government - Library of Congress, 2011). In the late nineteenth and early twentieth century the Kuwait economy shifted to depending on pearl hunting and trading.

In 1938, oil was discovered in Kuwait and started to be exported after World War II, when the modern development of Kuwait began (U.S Government - Library of Congress, 2011). Early oil exploration campaigns were carried out by foreign companies; however, the Kuwaiti government had a goal to control oil production activities, and this was achieved in 1976 (U.S Government - Library of Congress, 2011). Apart from the thriving oil industries, Kuwait has little other industry partly because of the scarcity of other natural recourses (U.S Government - Library of Congress, 2011).

Another noteworthy aspect of the Kuwait economic state is the establishment of The Kuwait Investment Authority (KIA). According to the International Monetary Fund (IMF) (2017a), Kuwait created the KIA in 1982 to overcome its economic dependence on oil revenues, which is still a problem today as shown in Figure 2. The KIA is an independent governmental institution that has its board of directors and is responsible for managing two previously formed funds, the Future Generation Fund and General Reserve Fund (IMF, 2017a). The Future Generation Fund, which was created in 1976, is considered a saving fund for future generation through receiving 10% of the country's annual income (IMF, 2017b). According to Al-Ojayan (2106), KIA assets and investments in 2016 were between $530 and $626 billion. Table 1 illustrates some of the important information about the economic status of Kuwait.

Figure 2 Kuwait Oil and Non-Oil Revenues (IMF, 2017b)



Note: All numbers are percentages out of GDP, Prepared from IMF data

Table 1 Kuwait Economic Indicators

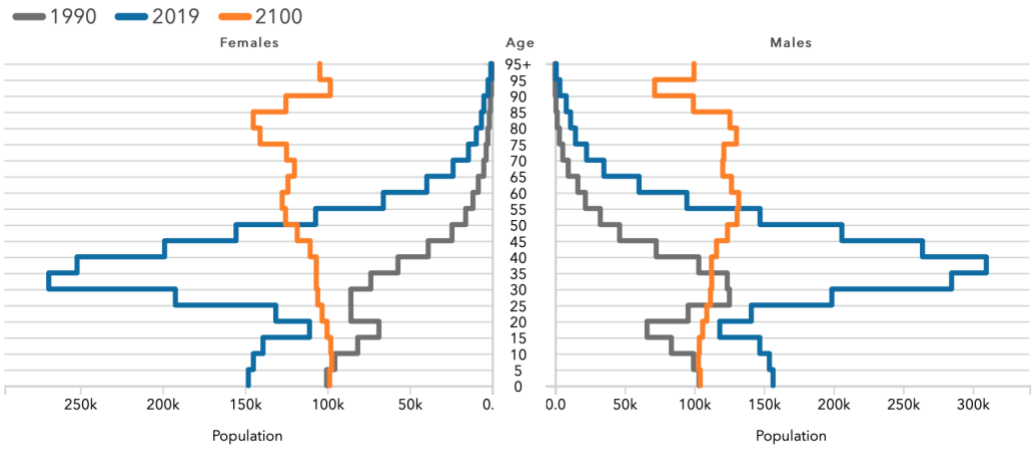
High Income Country*
GDP $134.7 Billion* (2019)
GDP Growth (annual %) = 0.4* (2019)
Tax Revenues (% of GDP) = 1.4* (2015)
Military Expenditure (% of GDP) = 5.6* (2019)
Unemployment 2.2%** (2015)

Note: *2016 rates reproduced from (World Bank, 2020a), ** 2015 rate for population above 15 years of age, reproduced from (Kuwait Central Statistical Bureau, 2016)

3. Population and demographics:

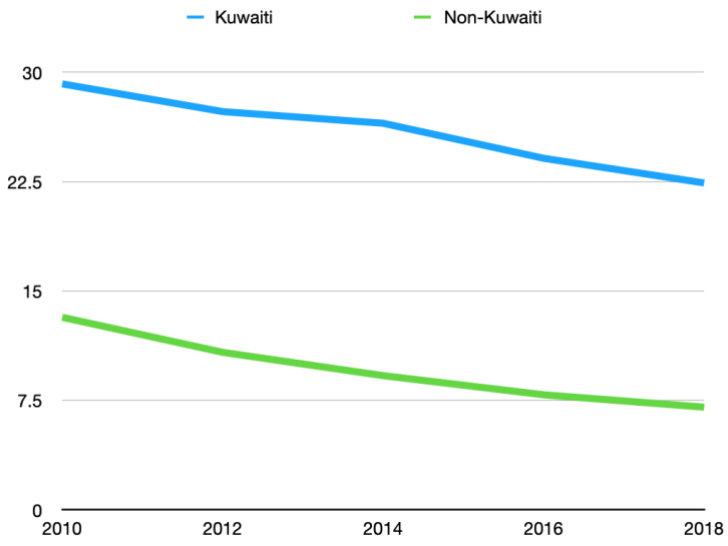
Kuwait has a young population where most are between 25 and 39 years of age. The male population in this age group is greater than females (Institute for Health Metrics and Evaluation (IHME), 2020; Vollset *et al.*, 2020), Figure 3. A prominent feature of the Kuwait population is the higher percentage of non-nationals, who constitute approximately 70% of the population (The Public Authority for Civil Information, 2017). The migration of foreigners began after World War II and accompanied oil discovery and the need for skilled workers in the oil industry (U.S Government - Library of Congress, 2011). Most of the foreigners are males, from Arab countries, and they stay for an average of fewer than five years (U.S Government - Library of Congress, 2011), which explains the higher number of males in the younger age group as illustrated in Figure 3.

Figure 3 Kuwait Population Pyramid, Reproduced From (Institute for Health Metrics and Evaluation (IHME), 2020; Vollset *et al.*, 2020)



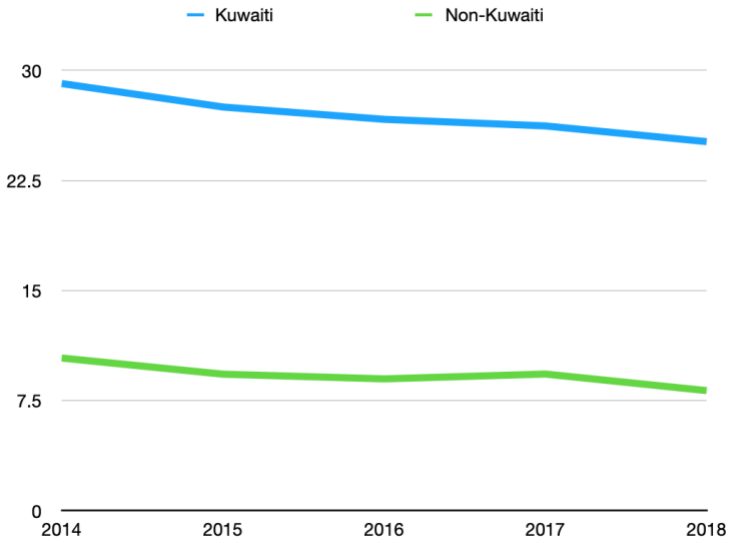
The natural increase of the population and the crude birth rate have been decreasing among both national and non-nationals; and the crude death rate can be described as stable (Figures 4, 5, and 6) (Kuwait Central Statistical Bureau, 2018a). To reduce the higher percentage of non-nationals in the society and invest in human resources, the Kuwaiti government started establishing a formal education system in the 1950s (U.S Government - Library of Congress, 2011). Education is free for nationals, including Kuwait University, and compulsory until the age of 14. Such efforts gradually led to an increase in literacy rates, and in 2015, 96% of the population aged 15 and above are literate (World Bank, 2017a).

Figure 4 Natural Population Increase Rate in Kuwait (Kuwait Central Statistical Bureau, 2018a)



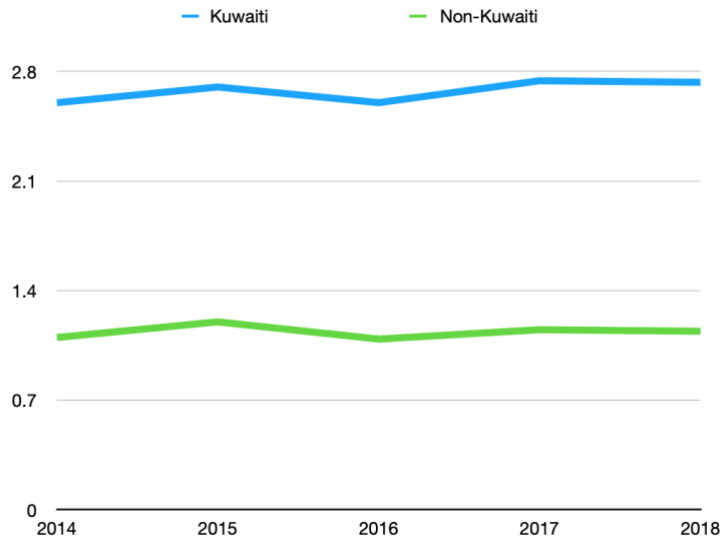
Note: Natural increase rate is calculated as (number of births - number of deaths/mid-year population estimation) * 1000, Prepared from Kuwait Central Statistical Bureau data

Figure 5 Kuwait Population Crude Birth Rate (Kuwait Central Statistical Bureau, 2018a)



Note: Crude birth rate (number of live births in a year/ mid-year population estimation) * 1000, Prepared from Kuwait Central Statistical Bureau data

Figure 6 Kuwait Population Crude Death Rate (Kuwait Central Statistical Bureau, 2018a)



Note: Crude Death Rate (number of death in a year/ mid-year population estimation) * 1000, Prepared from Kuwait Central Statistical Bureau data

The Kuwaiti government still depends on the expatriate workforce. According to Kuwait Central Statistical Bureau (2016), the majority of the labour force in the private sector are non-Kuwaitis. Some Government sectors still have a majority of their workforce formed by expatriates, especially in the Kuwait Ministry of Health (K-MOH) and some sectors of the Ministry of Education. Table 2 shows the distribution of Kuwaiti and non-Kuwaiti labour force between different employment sectors.

Table 2 Percentage Distribution of Employed Persons According to Sector for Both Sexes, Reproduced From (Kuwait Central Statistical Bureau, 2016)

Sector	Kuwaiti	Non-Kuwaiti	Total
Governmental	86.6	7.2	19.3
Government-Owned Establishment	5.4	0.8	1.5
Private	7.9	74.8	64.6
Household	0	17	14.4
Other	0.1	0.2	0.2
Total	100	100	100

Kuwaiti society has several stratifications, but the principal social separation is between the nationals and non-nationals (U.S Government - Library of Congress, 2011). Other social divisions exist, such as between the Sunni and Shia Muslims and between the general population and the wealthy merchant families, including the ruling family. A final feature of the Kuwaiti population is the high percentage living in urban settings, with 98.3% of the population live in urban environments (World Health Organisation (WHO), 2017)

4. Kuwait health system:

4.1. History:

The early years of the twentieth century marked the first attempt to introduce a health care system in Kuwait through the invitation of medical staff from the Arabian Mission of the Dutch Reformed Church in the U.S by the ruler of Kuwait at that time (Regional Health Systems Observatory-EMRO office of WHO, 2006). The invited staff established a hospital for men in 1911 and women in 1919. In 1934, the Olcott Memorial hospital was opened, and in 1936 the Government established the K-MOH (WHO Regional Health Systems Observatory-EMRO, 2006). As the Government started to receive the oil revenues other health facilities started to be built, such as the Amiri hospital in 1949 and the Kuwait Oil Company hospital (Regional Health Systems Observatory-EMRO office of WHO, 2006). In 1950 the Kuwaiti government introduced a free health care system for the entire population, including the non-nationals.

4.2. Health indicators:

Despite the establishment of health services, health indicators in the Kuwaiti population showed limited improvements in the first half of the twentieth century. For instance, between 1909 and 1946, the mortality rates stabilised between 20-25 per 1,000 of the population and the infant mortality rate was between 100 to 125 deaths per 1,000 live births (U.S Government - Library of Congress, 2011).

However, after receiving the revenues from the oil industry and establishing the national health coverage system, Kuwaiti population health indicators started to improve (U.S Government - Library of Congress, 2011). As cited in the report, in 1950 the mortality rates and infant mortality rates decreased from 23 to 17 per 1000 and 100 to 80 per 1000 respectively. With the development of the health services, Kuwait witnessed an epidemiological transition from infectious diseases to non-communicable diseases (Regional Health Systems Observatory-EMRO office of WHO, 2006). Tables 3 and 4 show basic health indicators and the common causes of deaths and disabilities in Kuwait.

Table 3 Kuwait Health Indicators, Reproduced From (Kuwait Central Statistical Bureau, 2018a)

Indicator	2014	2015	2016	2017	2018
Life expectancy at birth	M: 78.7 F: 80.2	M: 79.1 F: 80	M: 81 F: 80.5	M: 79.7 F: 82.7	M: 81.1 F: 83.3
Infant mortality rate*	7.40	7.70	7.62	6.98	7.43
Probability of dying before age of 5*	8.84	8.96	9.25	8.18	8.77
Maternal mortality **	11.4	8.4	3.4	5.1	5.4

Note: M=Male, F=Female, * Per 1000, ** Per 100,000

Table 4 Most Common Causes of Deaths and Disabilities in Kuwait, Reproduced From (Institute for Health Metrics and Evaluation, 2017, 2021)

All Deaths (2019)	Premature Deaths (2016)	Causes of Most Disabilities (2016)	Risk factors for Most Combined Deaths and Disabilities (2019)	Causes of Most Combined Deaths and Disabilities (2019)
• Ischemic heart diseases • Stroke • Low respiratory tract infections • Road injuries • Alzheimer's disease • Hypertensive heart disease • Diabetes • Chronic kidney disease • Congenital effects • Lung cancer • Neonatal disorders	• Ischemic heart diseases • Road injuries • Congenital effects • Cerebrovascular diseases • Neonatal preterm birth • Lower respiratory tract infection • Self-harm • Hypertensive heart disease • Breast cancer • Chronic kidney disease	• Low back and neck pain • Migraine • Skin disease • Depressive disorders • Sense organ disease • Diabetes • Anxiety disorders • Other musculoskeletal diseases • Drug use disorders • Oral disorders	• High body-mass index • High fasting plasma glucose • High blood pressure • Tobacco • Dietary risks • Air pollution • High LDL • Malnutrition • Kidney disfunction • High total cholesterol • Occupational risks	• Gynaecological diseases • Diabetes • Other musculoskeletal diseases • Low back pain • Depressive disorders • Headache disorders • Ischemic heart diseases • Road injures • Neonatal disorders

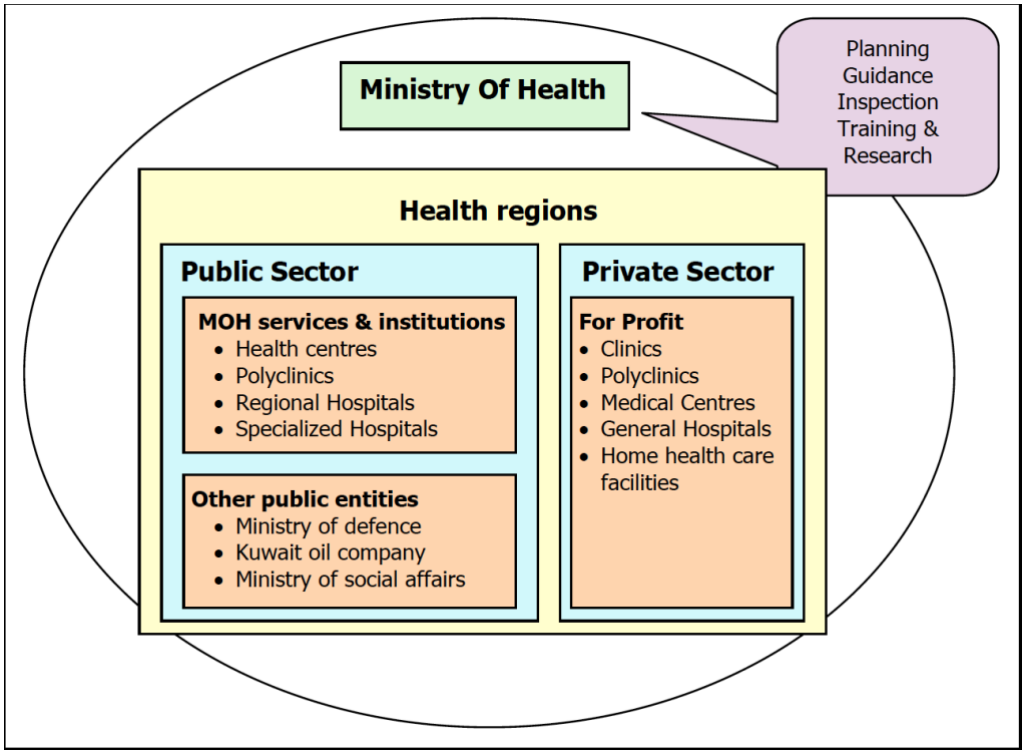
4.3. Health system structure:

The Kuwaiti health system structure can be divided into public and private sectors, Figure 7, demonstrates the structure of the Kuwaiti healthcare system. The K-MOH can be considered the main provider of health services in the public sector. This section will discuss the structure of the public healthcare sector.

4.3.1.Public healthcare sector:

Since independence in 1961, Kuwait has focused on establishing a healthcare system that improves the population's physical and mental health, social well-being and prevents disability (Regional Health Systems Observatory-EMRO office of WHO, 2006). The K-MOH was, and still is responsible for establishing, monitoring and improving the healthcare services provided. Although some of the public health services in Kuwait are provided by entities, such as the Ministry of Defence and the Oil Company Hospital, this part will focus on the K-MOH structure as it is the main health service provider. Figures 7, illustrates the general structure of the Kuwaiti healthcare system.

Figure 7 Kuwait Healthcare System Structure, Reproduced From (Regional Health Systems Observatory-EMRO office of WHO, 2006)



4.3.2. General structure:

The Kuwait healthcare system is organised as primary, secondary and tertiary providers. Primary care services are considered the first point of contact between patients and health services and are provided through several centres that include preventive, curative and speciality clinics (Regional Health Systems Observatory-EMRO office of WHO, 2006). Secondary care services are provided by six general hospitals and tertiary services are provided by several speciality hospitals.

According to the WHO (2017), the K-MOH receives the five-year national plan from the Supreme Council of Planning, which is then implemented, supervised, and circulated between the Ministry's departments by the Department of Planning. The health minister is at the top of the health system bureaucratic structure. S/he is assisted by a single undersecretary and twelve assistant undersecretaries (Regional Health Systems Observatory-EMRO office of WHO, 2006). The assistant undersecretaries are responsible for supervision of several aspects such as public health affairs, dental services, laboratories and blood transfusion, drugs and medical supplies, financial affairs, administrative affairs, legal affairs, quality control, and medical licensing.

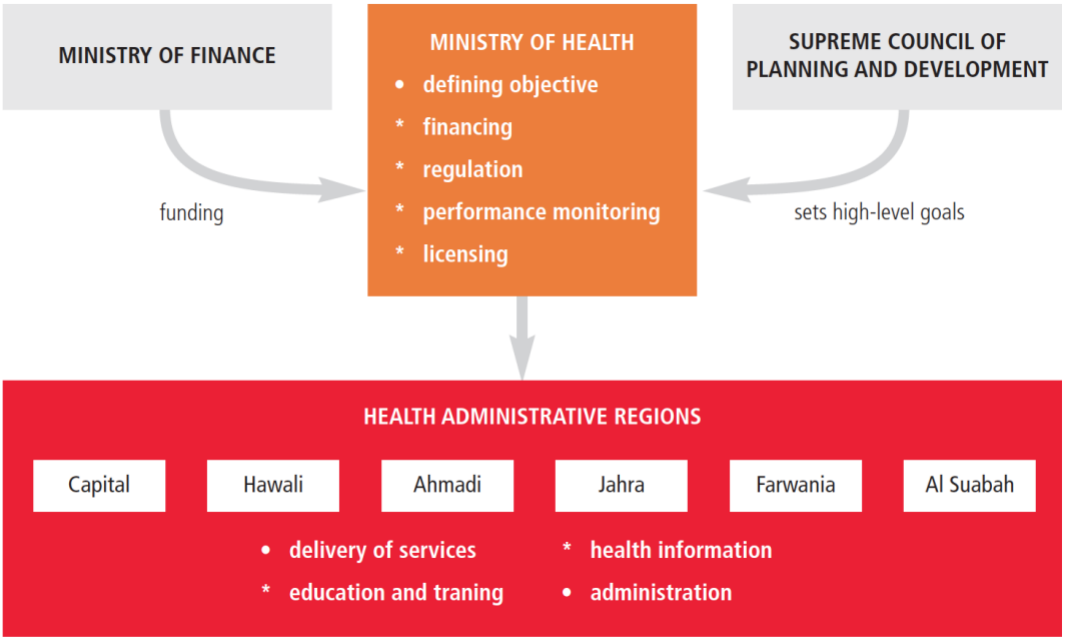
A ministerial council composed of the undersecretary and the assistant undersecretaries and headed by the minister meet on a weekly basis (Regional Health Systems Observatory-EMRO office of WHO, 2006). Despite the existence of clearly written job descriptions, administrative, and financial roles of each central department, the K-MOH structure is heavy at the top of its hierarchy, and there is duplication in the roles and responsibilities between different departments (Regional Health Systems Observatory-EMRO office of WHO, 2006). However, the same report mentioned that there is a good relationship between the different departments with the establishment of joint committees that organise issues of mutual interests (Regional Health Systems Observatory-EMRO office of WHO, 2006).

4.3.3. Health regions:

Kuwait is divided into six health regions, The Capital, Hawali, Ahmadi, Jahra, Farwania, and Al-Suabah areas, which have some degree of authority over financial, administrative, workforce supervision and training, and management of delivery issues (WHO, 2017). The health areas are responsible for implementing the ministry's national plan and establishing and implementing a computerised system for health information in the area, Figure 8 (Regional Health Systems Observatory-EMRO office of WHO, 2006). Although most of the specialised tertiary hospitals are located in Al-Suabah area, each health region has several primary care centres, at least one general hospital, and speciality clinics that provide preventive, primary, and secondary care services (Regional Health Systems Observatory-EMRO office of WHO, 2006). Each area is headed by a director, who

reports to one of the assistant undersecretaries and is assisted by managers of administrative, financial, primary care services, general health services and dental services departments.

Figure 8 Key Stakeholders and Structure in K-MOH, Reproduced From (Mossialos *et al.*, 2018)

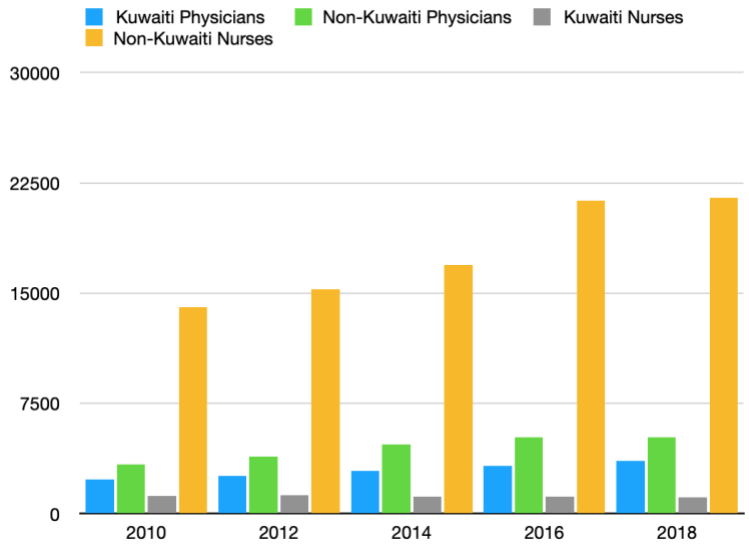


4.4. Healthcare workforce:

Since most of the health workers are practising in the public sector, this part will focus on the health workforce in the K-MOH. Although there has been a growth of health services, the rates of health workforce physicians remained the same between 2014 and 2018, while there was a slight increase in nurses. For instance, the rates of physicians remained around 1.9 per 1000 population; rates of nurses per 1000 population have increased between 2014 and 2018 from 4.5 to 4.9 (Kuwait Central Statistical Bureau, 2018b). However, according to the WHO Regional Office for the Eastern Mediterranean (2015), Kuwait is still relying on expatriate health workers, as are most of the neighbouring GCC countries. The same report mentioned that despite the efforts to replace the expatriate workforce with Kuwaitis, which is called the "Kuwaitization" policy, the country will depend on its international workforce for many coming years. For example, in 2018 Kuwaitis comprised around 40% of physicians and 5% of nurses (Kuwait Central Statistical Bureau, 2018b). Figure 9 demonstrates the difference in numbers between expatriate and national health workforce.

Several studies have examined the migration of healthcare workers to GCC countries (Imran *et al.*, 2011; Tangcharoensathien *et al.*, 2018, Schumann, Maaz, and Peters, 2019), although none have focused only on Kuwait. Imran *et al.* (2011) cited the agreement between some GCC countries and Pakistan as a cause of migration, Schumann, Maaz, and Peters, (2019) suggested that the main motivator of Egyptian doctors to migrate to GCC countries was the financial attraction with higher salaries. In Kuwait, the recruitment process for international doctors usually starts by publishing advertisements in the newspapers by the Kuwait embassy in the targeted countries, which is then followed by verification of applicants' documents and interviews. The reliance on a non-national workforce had been labelled as a negative aspect of GCC countries health systems that need to be tackled due to the cultural mismatch between the non-national workforce and the population (Mossialos *et al.*, 2018; Sheikh *et al.*, 2019) and their high turnover rates (Khoja *et al.*, 2017).

Figure 9 K-MOH Health Workforce (Kuwait Central Statistical Bureau, 2018b)



Prepared from Kuwait Central Statistical Bureau data

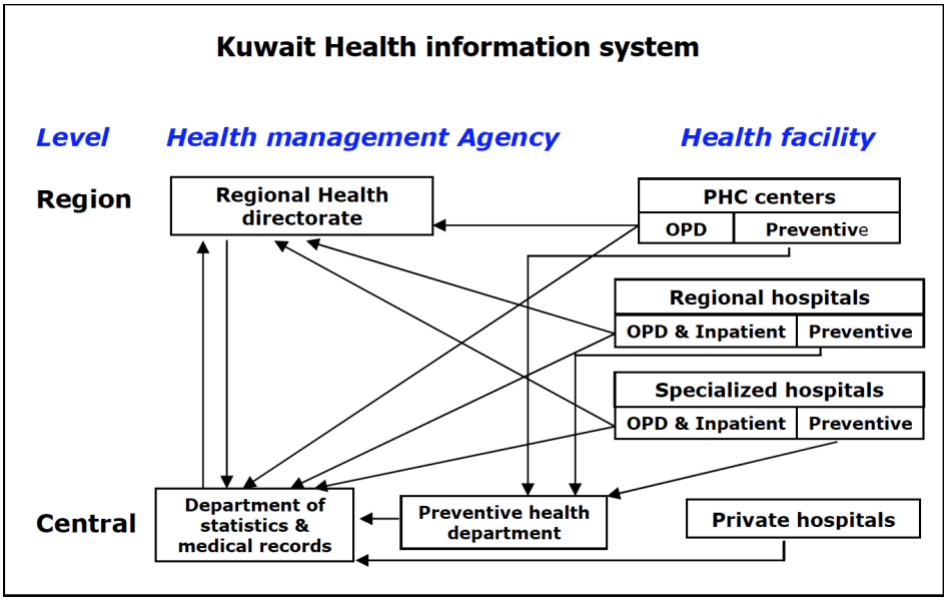
An important factor that plays a role in the number of health workers is the existence and productivity of education programs in Kuwait. For physicians' basic medical training, Kuwait has one medical school that was established in 1973, and the first class of students was admitted in 1976 (Al-Jarallah, Moussa and Al-Khanfar, 2009). Enrolled medical students increased from 48 in 1976 to 95 in 2009 with an average of 70 graduates annually. A more recent report from Kuwait Institute for Medical Specializations (KIMS) showed that of the recently graduated physicians registering for the Internship Training Program, which is a one-year training obligatory to all fresh graduates, the number of graduates from the Kuwait medical school in 2015 was 91 and from other international medical schools was 141 (KIMS, 2015). Also, out of those who joined the internship program, 199 physicians were Kuwaiti nationals and 33 were non-Kuwait (KIMS, 2015). In addition, the

international scholarship program for postgraduate training in Kuwait had 25 physicians' postgraduate training programs with a total of 782 physicians enrolled in different years of the program (KIMS, 2015).

4.5. Health information system:

In 2013, K-MOH changed the name of the Directorate of Health Statistics and Medical Records to the National Centre of Health Information, and the International Classification of Disease coding system was adopted (WHO Regional Office for the Eastern Mediterranean, 2015). Data are collected from the regional health information department, sent to the main centre and entered into a national computerised system. Numerous data indicators such as mortality, morbidity, infectious diseases, and vaccinations data are collected from primary, secondary, and tertiary health centres and hospitals and published in an annual report by K-MOH (WHO Regional Office for the Eastern Mediterranean, 2015). Main data are also collected from private hospitals. Figure 10 demonstrates the organisation and structure of health information data in Kuwait.

Figure 10 Organisation and Structure of Health Information Collection in Kuwait, Reproduced From (Regional Health Systems Observatory-EMRO office of WHO, 2006)



Note: PHC: Primary health care centres, OPD: Outpatient department, Department of statistics and medical records have been renamed to the National Centre of Health Information

4.6. Health financing:

According to the WHO (2017), health is financed in Kuwait based on the single-payer system. In 2016, the Government established health insurance for the retired population, which added a new financing method to the Kuwaiti health system (WHO, 2017). The expatriate population are obliged to buy health insurance

coverage through either the public or private sector (WHO Regional Office for the Eastern Mediterranean, 2015). Disadvantaged populations are helped by the Patient Support Fund, which is a non-governmental organisation, in cooperation with K-MOH. Table 5 shows some of Kuwait health financing indicators.

Table 5 Kuwait Health Financing Indicators, Reproduced From (World Bank, 2017b)

	2012	**2013**	**2014**
Total Health Expenditure (% of GDP)	2.6	2.6	3
Public Health Expenditure (% of GDP)	2.2	2.2	2.6
Private Health Expenditure (% of GDP)	0.4	0.4	0.4
Public Health Expenditure (% of total health expenditure)	85	84.6	85.9
Public Health Expenditure (% of government expenditure)	5.8	5.8	5.8
Out-of-Pocket Health Expenditure (% of total expenditure on health)	13.5	13.9	12.7
Out-of-Pocket Health Expenditure (% of private expenditure on health)	90.5	90.5	90.5
Health expenditure per capita, PPP (constant 2011 international $)	2,017.9	1,968.3	2,319.6
Health Expenditure Per Capita (current US$)	1,309.1	1,252.5	1,385.8

Recently K-MOH increased the fees for using the public healthcare sector for expatriates (Agencies, 2017). Another noteworthy development in the structure of health financing is the establishment of The Health Assurance Hospitals Company (Dhaman) in 2015 as a public-private partnership (Dhaman, 2017). The company proposes to offer primary and secondary health services for expatriates (and their families) working in the private sector with the first hospital expected to open soon (Omar and Agencies, 2017).

4.7. Challenges facing the health system:

A report by the WHO (2017) discussed and categorised the actions needed to improve the Kuwaiti health system into five main groups, which will be discussed in this section:

4.7.1.Strengthening the health system:

The WHO (2017) has recommended strengthening the health system through improving the delivery of services, which can be developed by consolidating the primary care services and accreditation programs and improving the referral system. The same report highlighted the role of supporting and developing the national health workforce through all levels of the system including academia. It discussed the importance of establishing policies that assess the current situation of the health workforce and methods to produce and recruit the workforce needed to build the system's capacity. In the same report, the WHO (2017) also stressed the importance of developing a comprehensive, electronic health information system. Finally, it suggested that

Kuwaiti policymakers need to consider establishing cost-containment and cost-effective policies to implement an equitable insurance option for expatriates (WHO,2017).

4.7.2.Non-communicable diseases:

The Kuwaiti population is increasingly suffering from non-communicable diseases and increasing in age. According to The Institute for Health Metrics and Evaluation (2021), the Kuwaiti population is ageing and the forecasted life expectancy in 2100 will 91.7 for females and 86.2 for males, compared 87.2 for females and 80.7 for males in 2017. Non-communicable diseases are responsible for most Kuwaiti deaths and disabilities (Institute for Health Metrics and Evaluation, 2021). The risk factors for both death and disabilities are similar, as obesity, high fasting glucose, and high blood pressure, are the top three risk factors, Table 4. The causes of death and disability in Kuwait are more similar to Western countries indicating the movement of Kuwait towards a society dominated by non-communicable diseases. Therefore, the WHO (2017) highlighted the role of improving the monitoring and surveillance system to measure the exact burden of non-communicable diseases. It also highlighted the need to develop policies that can improve the population lifestyle, such as campaigns focusing on risk factors and adolescent focused programs.

4.7.3. Mental health, environmental health, and emergency preparedness and response:

The WHO (2017) recommendation for improving the mental health service was to establish community and home-based mental health services. In addition, the report highlighted the importance of establishing school mental health programs. Since the Kuwaiti government adopted the regional environmental health framework, K-MOH needs to establish and initiate a national environmental framework that involves all of the involved sectors (WHO, 2017). According to the WHO (2017), K-MOH needs to train the health workforce to face any future health security threats and address the gaps in the International Health Regulations.

5. Summary:

This chapter presented an overview of the political and economic characteristics of Kuwait and discussed in more detail the demographics of the Kuwaiti population and the health system. The next chapter will outline the importance of primary care in health systems and describe the structure of primary care in Kuwait.

Chapter Three: Primary Health Care Systems

1. Introduction:

This chapter will present an overview of primary care as a concept, its history, and development. The impact of primary care on a population's health and its position in the health system will also be discussed. The chapter will finish with an overview of the primary care system in Kuwait.

This chapter presents a high-level overview of primary care. In order to write this, a number of data sources were used. These included publications from international organisations, mainly the WHO, United Nations International Children's Emergency Fund (UNICEF), and OECD. Other sources were used, including the work of Barbara Starfield and Jan de Maeseneer.

2. What is primary health care:

2.1. Primary care definition and terminology:

Primary care has long been a part of health systems, particularly when considered in terms of general practice or family medicine (Kmietowicz, 2006; Goodwin and King's Fund (London, 2011). The importance of primary care was internationally recognised by the WHO in 1978 with the Alma Ata Declaration (WHO/UNICEF, 1979). This importance of primary care in all health care settings was reaffirmed in 2008 with the publication of Primary Care: Now More Than Ever (WHO, 2008a). Most recently, the WHO has again highlighted primary care with the Astana Declaration in 2018, designed to mark the 40th anniversary of the Alma Ata Declaration (WHO/UNICEF, 2018).

Both the 2008 report and the Astana Declaration reaffirmed that primary care should include three components: meeting the comprehensive health needs of the population and their families, addressing the determinants of health of the population through evidence-based policies, and empowering individuals and communities by involving them in shaping primary care policies and services by providing education and health information to improve their health. The Astana Declaration thus defined primary care as (WHO/UNICEF, 2018):

> *"A whole-of-society approach to health that aims to ensure the highest possible level of health and wellbeing and their equitable distribution by focusing on people´s needs and preferences (as individuals, families, and communities) as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care, and as close as feasible to people's everyday environment"* (P.2)

Primary care is recognised to encompass accessible, comprehensive, coordinated, first-line health care (WHO, 2004). According to the same source, the term primary care is interchangeably used with general practice and family medicine. In Kuwait, there are two types of doctors working in primary care centres: family physicians and general practitioners (GPs), Box 1.

Box 1 Doctors Working and Providing Primary Care Services in Kuwait

In Kuwait primary care doctors can be classified into:

- Family physicians or doctors: Medical doctors with certified family medicine training.
- GPs: Medical doctors without certified family medicine training.

2.2. A brief overview of primary care:

Primary care as a concept is thought to date back to 1920 when the Dawson Report was published in the UK. The report included the terminology "primary health care centres" (McWhinney, 1998; Starfield, Shi and Macinko, 2005). In 1974, the Institute of Medicine in the US (1994) defined primary care as:

> *"The provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practising in the context of family and community"* (P.2)

However, many studies link the concept of primary care to the Alma Ata declaration in 1978 that was announced at the end of a conference arranged by the WHO and UNICEF and committed the attending members to support primary care (International Conference on Primary Health Care, 1978; Medcalf *et al.*, 2015; Rifkin, 2018). Soon after the Alma Ata declaration, the WHO announced that primary care should be a cornerstone of the "Health for All by 2000" strategy (WHO, 1981). However, during the 1980s, developing countries struggled to apply the comprehensive approach of primary care due to their financial situation (Medcalf *et al.*, 2015).

According to Starfield (1994), primary care provides first-contact, comprehensive, continuous, coordinated, and preventive health care services. It also provides person-centred and preventive health care services that aim to deliver high quality and universal health coverage.

For most of the 19th century, primary care had been dealing with individual health problems of the population, till the end of the same century when screening for diseases and looking for asymptomatic diseases began, with GPs developing relationships with urban and rural communities (McWhinney, 1998). Thirty years after the Alma Ata declaration, in 2008, the WHO published their report "Primary Health Care – Now More Than Ever", recommending primary care reforms as illustrated in Figure 11(WHO, 2008a). In this, they reiterated the importance of primary care in all health systems, whether the country was a low-, middle- or high-income country.

Figure 11 Primary Care Recommended Reforms in "Primary Health Care – Now More Than Ever" Report, Reproduced From (WHO, 2008a)

In 2018, the WHO held a conference in Astana "Global Conference on Primary Health Care - From Alma-Ata towards universal health coverage and the Sustainable Development Goals" that aimed to reiterate the commitment made in the Alma Ata declaration and the 2030 Agenda of Sustainable Development (WHO, 2018b). Besides being the cornerstone of healthcare systems in providing universal health coverage, the declaration stated that primary care is the most important element in providing inclusive, effective and efficient service to improve population health and wellbeing (WHO, 2018b). Table 6 illustrates the commitments and tools stated in the declaration.

Table 6 Astana Declaration, Members' Commitments and Tools to Improve Primary Care, Reproduced from (WHO, 2018b)

Members' commitments	Tools to improve primary care are
Make bold political choices for health across all sectors	**Knowledge and capacity-building:** by applying knowledge, to strengthen primary care, improve health outcomes, ensure access for all people with the most appropriate level of care, respecting their rights, needs, dignity and autonomy.
Build sustainable primary health care	**Human resources for health:** To create decent work and appropriate compensation for health professionals and other health personnel working at primary health care. To continue investing in the education, training, recruitment, development, motivation and retention of the primary health care workforce, with an appropriate skill mix.
Empower individuals and communities.	**Technology:** To support broadening and extending access to a range of health care services through the use of high- quality, safe, effective and affordable medicines, including, as appropriate, traditional medicines, vaccines, diagnostics and other technologies.
Align stakeholder support to national policies, strategies and plans	**Financing**: To call on all countries to continue investing in primary care to improve health outcomes.

3. Importance and contribution of primary care:

Several studies have identified the positive effect of primary health care on individuals' health and health systems, most notably the work of Starfield and her colleagues. The benefits and impact of primary care can be seen according to its main components:

3.1. First-contact:

According to Starfield (1994), one of the main features of primary care is being the first-line of contact with patients, which determines the accessibility and the usage of health services by the population. Being the first-line of contact also demonstrates the "gatekeeping" role of primary care. Reducing the barriers facing primary care being the first-line of contact was associated with an increase in the continuity of care (Forrest and Starfield, 1998). Starfield (2011a) also argued that playing the role of first-line of contact for patients ensures providing timely care and can reduce the costs of ambulatory care services (Forrest and Starfield, 1996).

3.2. Person-centred care:

According to Starfield (2011b), primary care provides person-focused care rather than a disease-oriented service, which is based on accumulated knowledge of and according to the person's needs. Such an approach was found to enhance patients compliance with treatments (Bauman, Fardy and Harris, 2003), satisfy the needs of the older population (Little *et al.*, 2001; Røsstad *et al.*, 2013), improve patients' health and reduce referrals and diagnostic tests (Little *et al.*, 2001; Weston and Jordan, 2009). Also, the patient-centred approach was linked to reducing health services charges (Bertakis and Azari, 2011b, 2011a).

3.3. Comprehensiveness:

Among the important features of primary care is the ability to meet the population needs by providing a variety of services (Starfield, 1994). Starfield (2011a) also argued the need for comprehensive care provided by primary care, especially in an era of multimorbidity that populations around the world are facing. In a comparison between specialist and primary care physician visits experience, a study conducted in Taiwan showed that patients are more pleased with primary care doctors for several reasons, including the comprehensive service provided (Tsai *et al.*, 2010). According to Kringos *et al.* (2010), the comprehensive aspect of primary care was related to lowering the rates of hospitalisations, providing better health services at a lower cost, and enhancing primary care's prevention role.

3.4. Continuity of care:

Primary care can provide a long-term relationship between the GP and his/her patients, providing services according to their current and future needs. As mentioned by Hsiao and Boult (2008), the continuity of care provided by primary care is associated with reductions in the use of hospitals and emergency departments and lowering healthcare costs. The systematic review conducted by Kringos *et al.* (2010) demonstrated that the continuity of care could strengthen the other dimensions of the primary care system, decrease hospitalisations, lower healthcare costs, and improve the population's health and satisfaction. Mainous and Gill (1998) also showed the same positive effect of reducing healthcare costs caused by the continuity of care.

3.5. Coordinated care:

According to Shi (2012), primary care provides a combination of health services and information according to patients' needs and through connecting with other service providers, such as secondary or tertiary care. The coordinated care provided by primary care improves population health, enhances patient's satisfaction, and strengthens the other domains of primary care (Kringos *et al.*, 2010). Also, patients who reported good perceived health status reported better coordinated primary care (Tsai *et al.*, 2010).

3.6. Health prevention:

Primary care has an important role in disease prevention and protecting population health. According to Macinko, Starfield and Shi (2003), a strong primary care system was linked to reducing premature deaths caused by preventable or treatable conditions, such as asthma and vascular diseases. In addition, the availability of primary care doctors increases the use of preventive health services, such as immunisation programs and blood pressure or blood sugar check-ups (Continelli, McGinnis and Holmes, 2010). Low and middle-income countries who adopted a primary care model were successful in implementing several preventive health programs (Kruk *et al.*, 2010). Starfield, Shi and Macinko (2005) also cited that primary care plays a role in preventing illnesses and deaths.

3.7. Universal and equitable health coverage:

Providing equitable and universal health coverage are among the domains of primary care services (International Conference on Primary Health Care, 1978; Starfield, 1994). According to Starfield (2012), primary care provides an equitable healthcare service for populations. Primary care was also described as a "health equity-producing" policy (Starfield, 2011a). Several other studies also showed the positive effect of the primary care system on providing equitable health services and decreasing health inequalities (Shi *et al.*, 2005; Shi *et al.*, 2005; Starfield *et al.*, 2005; Starfield, Shi and Macinko, 2005; De Maeseneer *et al.*, 2007; Rawaf, De Maeseneer and Starfield, 2008).

3.8. Quality:

One of the main domains of primary care is providing high-quality healthcare. According to Hsiao and Boult (2008) and Starfield (2012), primary care provides high-quality healthcare services. Also, the availability of primary care physicians increases the quality of services provided (Tsai *et al.*, 2010). Kringos *et al.* (2010) argued that primary care is a multidimensional process consisting of the previously mentioned domains in this section which contribute to providing high-quality services and improved population health. For instance, countries implementing primary health care systems have healthier populations. Primary care also delivers patient-oriented (Rawaf, De Maeseneer and Starfield, 2008) and preventive health services (De Maeseneer *et al.*, 2007).

Cost-effectiveness and lower healthcare costs were seen in health care systems with primary care services (Rawaf, De Maeseneer and Starfield, 2008; Starfield, 2009; Kruk *et al.*, 2010). Primary care was also found to improve access to health services and decrease both hospitalisations and the use of emergency services (De Maeseneer *et al.*, 2007; Shi, 2012). According to the WHO and UNICEF (2018), primary care allows health

systems to adapt and respond to any needed changes and handle challenges in the future. The previously mentioned benefits identified by Starfield (2012) and Gulliford (2002), who found that an increase in the primary care workforce reduced hospitalisations and costs of health services in the population.

4. Primary care workforce:

The health workforce is one of the main elements of health systems and their development plans (WHO, 2006; WHO, 2014), in which higher workforce numbers delivering high quality services are associated with greater immunisation coverage, primary care outreach, and reductions in maternal and infant mortality (WHO, 2006). The primary care workforce is also considered to have a vital role within health systems by providing care for physical and mental health conditions, reducing the burden on secondary care services, and acting at community levels (WHO/UNICEF, 2018). The WHO human resources strategy 2030 also cited the importance of primary care workers in reducing the costs and dependency on specialists and using them as a tool in facing continuous changes in health needs (WHO, 2015).

Several studies have demonstrated the importance of primary care doctors to healthcare systems. According to Shi *et al.* (2005), an increase in one primary care doctor per 10,000 was linked to the reduction of 14.4 deaths per 10,000 in the U.S. Increasing the number of primary care doctors was associated with lower incidence and mortality rates of cervical cancer (Campbell *et al.*, 2003), and lower utilisation of health services (Kravet *et al.*, 2008), and an increase in the use of preventive health services (Continelli, McGinnis and Holmes, 2010). Primary care physician supply was associated with improved health outcomes of the population and reduction in mortalities, in which adding one doctor per 10,000 reduced the mortality by 49 per 100,000 (Macinko, Starfield and Shi, 2007). Increasing primary care physician supply was associated with better-reported self-health by the population (Gravelle, Morris and Sutton, 2008). Primary care physicians also improve quality by improving accessibility, comprehensiveness of the services (Tsai *et al.*, 2010) and reducing healthcare costs (Franks and Fiscella, 1998). In contrast, the reduction in primary care physician numbers increased emergency department visits (Guttmann *et al.*, 2010).

Despite such importance, the world is facing a shortage of primary care workers, and especially physicians. According to the WHO (2018a), the shortage of primary care workers has been noted since the declaration of Alma-Ata and continues until this day. The same report also indicates the imbalance between workers in primary care, doctors and nurses, in comparison to hospital specialists. As mentioned by The Lancet (2018), most European countries are facing a shortage of primary care doctors. In addition, the OECD (2016) cited that several countries, including England, France, and Canada, have increased the number of postgraduate training

posts in primary care programmes to meet the shortage of doctors. Similarly, the U.S. has developed the professional roles of nurses and physician's assistants to overcome the deficiency of primary care doctors (OECD, 2016).

Papp *et al.* (2019) also mentioned that the shortage of primary care physicians is a worldwide phenomenon. The shortage of primary care doctors, is affecting high, middle, and low-income countries (De Maeseneer *et al.*, 2007; OECD, 2016). According to Abyad et al. (2007), the lack of primary care staff is the main obstacle facing the establishment of primary care services in the Middle East, with most Middle Eastern countries dependent on a non-citizen workforce, which is estimated to be 5% to 10% of the total number of health workers in Middle Eastern countries.

5. Primary care in Kuwait:

Currently, the Kuwaiti health system is organised according to the primary care model, with primary care centres being the first line of contact and providing both curative and preventive services. Primary care centres are decentralised but with limited administrative and financial autonomy, with the K-MOH in the centre and six health districts, each with its primary care centres and secondary care hospitals (WHO Regional Office for the Eastern Mediterranean, 2014). According to the Central Directorate of Primary Care (2016), there are 104 primary care centres in Kuwait providing general medical, maternity, diabetes, and dental health care services, of which seven were temporarily closed for maintenance purposes.

In the current system, primary care centres are the first line of contact for the population with medical services. Patients with non-emergency complaints will visit the primary care centre according to their catchment area, and will be referred to the area's main hospital if more specialised care is needed (Mossialos *et al.*, 2018). In the current system, patients are not assigned to a specific primary care doctor, and the community perceives them as not equipped with the appropriate skills, which leads to patients' limiting their visits, mainly for obtaining sick leave certificates. Currently, in Kuwait, as in most GCC countries, most of the services in the primary care centres are provided by doctors; pharmacists are responsible for dispensing medications, nurses roles are limited to minor wound care, giving intramuscular medications, and blood withdrawal procedures. Other services are provided with specialised personal, such as dentists, nutritionists, surgeons, and lab technicians. Administrative staff are assigned to distributing patients to the available doctors on their arrival to the centre, withdrawing and saving patients files, public relations, and secretaries for the centre manager.

Before 1983, Kuwait had various polyclinics providing basic medical services, which were delivered by doctors with diplomas in different specialities other than primary care (Fraser, 1995). However, doctors working at the polyclinics experienced low morale and a lack of recognition for their work and preferred to be based in a hospital (Fraser, 1995). In addition, the health services provided in the polyclinics were below standard, with an absence of clinical guidelines and medical records.

In 1983, the K-MOH asked the Royal College of General Practitioners (RCGP) in the UK for help in improving their primary care services and forming a training program under the supervision of the RCGP aiming to qualify doctors as family physicians (Fraser, 1995). With the help of the RCGP, the K-MOH chose to label doctors graduating from the program as family physicians, as an indication of the personal and comprehensive care provided and to differentiate them from the traditional doctors working in the polyclinic (Fraser, 1995). Such efforts led to awarding the first Kuwait/RCGP diploma in family medicine in September 1987 (Fraser, 1995).

The family medicine training program continued evolving, and in 2000, extended the training from three to four years. By 2002, there were 21 training centres (Al-Baho and Serour, 2007). The number of family physicians also showed significant changes; family physicians increased from 2% in 1987 to 26% in 2002 of the total doctors working in the primary care service, referred to as GPs. As described in Box 1, these GPs do not usually have a qualification in primary care. Family doctors of Kuwaiti origin increased from 7.7% in 1987 to 77% in 2002, and the percentage of female doctors also increased from 38.5% in 1987 to 62% in 2002 (Al-Baho and Serour, 2007).

The popularity of the KBFM program has been increasing. According to Al-Jarallah (2008), among the local training programs, family medicine was the most popular, with 35% of medical graduates choosing it for their postgraduate medical education. Similarly, the KIMS Medical Education Study Group (2008) claimed that due to international recognition by the RCGP and the availability of the training locally, the family medicine training program was preferred by medical graduates.

However, such interest can be questioned due to several factors. As mentioned earlier, the interest in the family medicine program may have been due to factors other than personal preference such as the international recognition and the availability of local training programs, which might affect the doctors' job satisfaction and morale. The results of the study by Abdulghafour et al. (2011), which showed high rates of burnout syndrome among Kuwaiti family medicine doctors, may indicate high job dissatisfaction among Kuwaiti family medicine doctors.

In addition, Al-jarallah (2008) showed that medical graduates continued to prefer the specialities of internal medicine, general surgery, and paediatrics when they had the chance of obtaining postgraduate education in other countries. Al-Baho and Serour (2007) showed that between 1983 and 2002, 34 graduates, which comprised 22.4% of all graduates at that time, had left primary care practice. According to the same authors, the main destinations of those family physicians were resignations (9.2%), moving to administrative posts (6%), and moving to the private health sector (4%).

The latest statistics from Kuwait show that the total number of doctors working in primary care in 2018 was 1,026, out of which only 194 were certified as family physicians (Al-Duwaisan and Bendhafari, 2019). To compare Kuwait with other countries, in 2018 Qatar had 1,305 generalist physicians (WHO, 2020), which is higher than Kuwait despite their smaller population of 2.7 million in 2018 (World Bank, 2020b), while Kuwait had 4.1 million in the same year (World Bank, 2020c). Another comparison is to the OECD countries, in which the average of generalist physicians per 1000 of population was 0.45 in 2017 (OECD, 2017), and in Kuwait it was 0.24 in 2019, based on the previously mentioned doctors number and 2019 Kuwait population (World Bank, 2020c). In 2015 Kuwait had 1.49 trained family physicians per 10,000 population, which is below the international recommendation of 3 per 10,000 (Qidwai and Wajid 2019).

Retention of family physicians is also a challenge. The total resignations of all doctors working in primary care between 2013 and 2018 accounts for 7% for all of the doctors working in K-MOH (Human Development Department, 2018b), and 25 primary care doctors transferred to administrative positions (Human Development Department, 2018a). Moving to administrative posts appears to be a popular option amongst family physicians. Of the total administrative leadership positions in 2018, 45% were held by family physicians, Table 7 (Human Development Department, 2018a). However, why doctors might make this move is not known. Taken together, however, it indicates a deficit of primary care doctors' numbers in Kuwait, and their tendency to move for administrative positions in Kuwait.

Table 7 Number and Percentage of Family Physicians in Administrative Positions till March 2018, Reproduced From (Human Development Department, 2018a)

Administrative position	Number of family physicians	Total number positions	Percentage of family physicians
K-MOH Undersecretary	1	4	25%
Director of Health District	4	8	50%
Hospital Director	10	20	50%
Hospital Deputy Director	13	20	65%
Directorate Director	10	21	47%
Directorate Deputy Director	6	14	42%
Head of Department	10	29	34%
International Health Attaché	2	8	25%
Total	56	124	45%

6. Summary:

The chapter discussed the history, development, and importance of primary health care briefly. The primary care workforce's significance, especially primary care doctors, and an overview of primary care services were discussed. The current shortage in primary care doctors was also outlined, which opens the door for questions related to the factors affecting choosing primary care careers and factors influencing leaving them.

Chapter Four: Methodological and Theoretical Considerations

1. Introduction:

This chapter will present the methodology and the theoretical framework adopted in this PhD project and the rationale for using such an approach. The methodology used was a mixed methods research design that incorporated three different studies, each with their own approach to data collection. The first was a systematic review of the international literature that examined the factors influencing the recruitment and retention of primary care doctors. The second study was a quantitative survey aiming to capture the career intentions of primary care doctors in Kuwait. The final study used a qualitative approach to interview primary care doctors who had completed the survey, exploring their career intentions and reasons for staying or leaving primary care. The results of the systematic review informed the data collection and analysis of both quantitative and qualitative studies; the theoretical framework informed a final synthesis of the three studies. Figures 12 and 13 illustrate the structure of the methodology used and the process of the analysis.

Figure 12 Chronological Process of The Methodology Used in This PhD Project

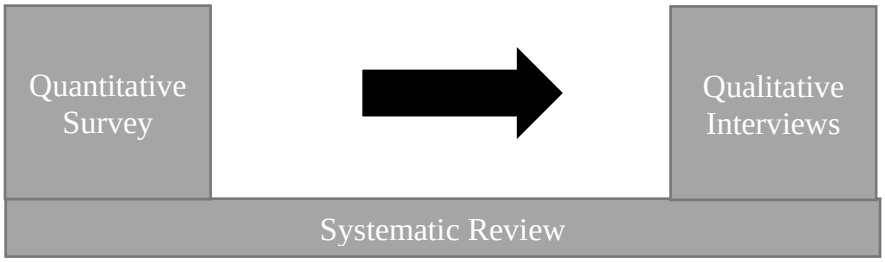
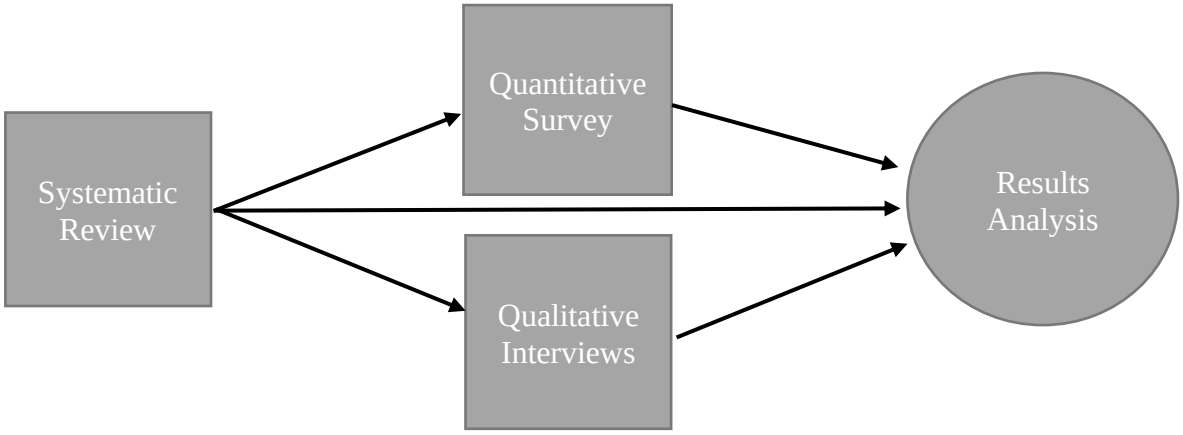


Figure 13 The Analytical Process of Results Used in This PhD



2. Mixed methods research design:

In this part, the aims and objectives of this project will be presented briefly. Mixed methods research will be defined, and the epistemological and historical background briefly described. The different types of mixed methods research will be explored, then the advantages and the rationale for using it in this PhD project will be explained.

2.1. Aims and objectives:

As mentioned earlier the project aims to explore and understand the factors influencing recruitment and retention of primary care doctors in Kuwait, Table 8.

Table 8 Aim and Objectives of The PhD Project

Aim	• To understand the factors influencing recruitment and retention of qualified doctors into primary care and to examine the current situation in Kuwait primary care with respect to career intentions of those practising primary care.
Objectives	• To review and understand the factors at play internationally with respect to recruitment and retention of qualified doctors into primary care in urban settings. • To explore the intentions of leaving clinical practice among current practising primary care physicians. • To investigate the motivators of primary care doctors to leave clinical practice.

2.2. Definition:

Several definitions have been developed for mixed methods research. For instance, Johnson, Onwuegbuzie and Turner (2007) listed nineteen different definitions and ended up defining mixed methods research as:

> *"An intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological or research paradigm along with qualitative and quantitative research"* (129)

However, Creswell and Clark (2018) argue that a definition should include the three elements of methods, research design, and philosophical orientation; therefore, they defined mixed methods research as:

"The researcher collects and analyses both qualitative and quantitative data rigorously in response to research questions and hypotheses, integrates (or mixes or combines) the two forms of data and their results, organises these procedures into specific research designs that provide the logic and procedures for conducting the study and frames these procedures within theory and philosophy" (5)

This definition was adopted in this PhD project as it fitted the aim of the work, and it was conducted using a theoretical framework to help underpin the work, the STF. Also, this definition explains the procedure of using multiple research methods to answer the research objectives outlined in Chapter 1.

2.3. Epistemological background:

In terms of epistemology, there are different approaches to describing mixed methods studies. Creswell and Clark (2018) argued that mixed methods studies should be seen through a set of philosophical assumptions, which are the beliefs that guide the research inquiries. They described four types of philosophical assumptions or worldviews, namely the postpositivist, constructivist, transformative, and the pragmatist worldviews, Box 2 (Creswell and Clark, 2018).

Box 2 The Four Types of Philosophical Assumptions or Worldviews, Adapted From (Creswell and Clark, 2018).

- **Positivism:** Usually used in quantitative research. Knowledge gained by determinism or cause-effect associations, reductionism and focusing on specific values, measuring values and detailed observation, and testing theories.
- **Constructivism:** often associated with qualitative research. Focus on the views and understandings of participants, which subsequently originate the worldview. Perceived as a "bottom to top" approach, personal views form a bigger picture or understanding.
- **Transformative:** Focuses on social justice and human rights and focus on specific communities or populations, such as women, racial and ethnic groups, and people with disabilities. The aim is to interact with those populations and improve the lives of marginalised populations.
- **Pragmatism:** Usually associated with the used of mixed methods research. The focus here is the outcome and the use of multiple data collection methods to reach and what works best in the real world.

According to the same authors, the pragmatist worldview is characterised by accepting single and multiple realities and choosing practical and applied research methodologies that are the best to answer the research question. Pragmatist worldview also has both biased and unbiased perspectives, combines quantitative and qualitative data, and uses both formal and informal language. The pragmatist worldview also focuses on the consequences of actions, is problem centred, and is a real world-oriented view (Creswell and Clark, 2018).

In conducting this work, I adopted the pragmatist worldview. The PhD project is problem centred, focused on the recruitment and retention of primary care doctors in Kuwait, and with a realist and pragmatic view on the causes and proposed solutions for the problem of recruitment and retention. With a clear aim, rooted in a definable problem of recruitment and retention of family doctors in Kuwait, this project focused on collecting the data that best answered the research objectives described earlier. Each objective was best answered by a particular method: a systematic review; a quantitative study; and a qualitative study.

2.4. Types of mixed methods designs:

It is recognised that there are three main types of mixed methods research designs: the convergent design, the explanatory sequential design, and the exploratory sequential design, Figure 14 (Pluye and Hong, 2014; Creswell and Clark, 2018). While each method integrates quantitative and qualitative methods, each do it in different ways and at different times in the study.

In the convergent design, qualitative and quantitative data can be combined in the data collection phase, with both data types collected at the same time, combined during analysis or in both phases (Pluye and Hong, 2014; Creswell and Clark, 2018). The explanatory sequential design, which is adopted in this project, has two separate phases wherein the quantitative data are collected first. This phase then informs the qualitative study, which in turn can be used to better understand the quantitative results. The exploratory sequential design starts with qualitative data collection that helps in designing the quantitative collection study and ends with the interpretation of the results, Figure 14.

2.5. Rationale, advantages, and disadvantages:

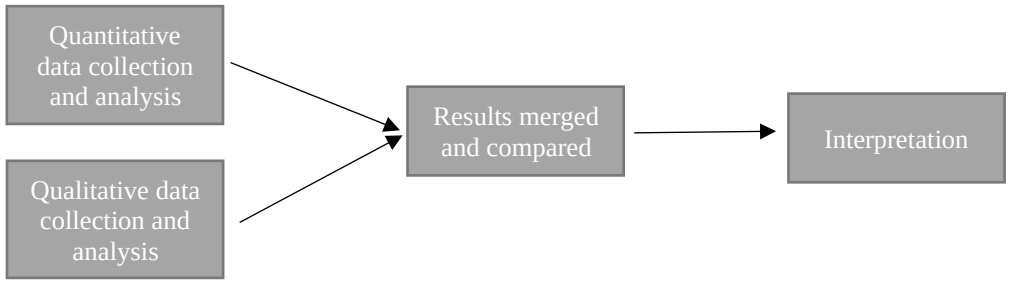
2.5.1.Rationale of using mixed methods design:

Several studies describe the benefit of using mixed methods designs in healthcare research. For example, Curry *et al.* (2013) cited their ability to explore complex phenomena in healthcare and healthcare delivery systems through capturing the opinions of patients, healthcare providers, and organisations. Mixed methods research combines the strength of numbers and stories, which can influence the rationale for decision making and give power to changing policies, respectively (Pluye and Hong, 2014). Vedel *et al.* (2018) also argued that collecting comprehensive data that reflect the complex nature of the real environment and account for the social and cultural issues make mixed methods designs suitable for understanding the complex nature of primary problems.

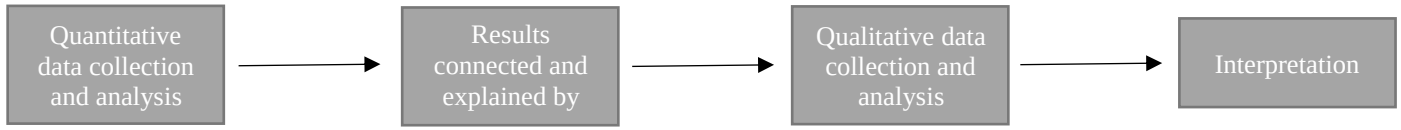
As shown in Table 8, this PhD project aimed to understand the factors influencing the recruitment and retention of primary care doctors, especially in Kuwait. Previous studies showed that different factors could affect the recruitment and retention of primary care physicians. For instance, job satisfaction (Sibbald, Bojke and Gravelle, 2003), ageing, health, and workload can affect primary care doctors recruitment and retention (Sansom *et al.*, 2016). According to Doran *et al.* (2016), increases in administrative tasks and workload, lack of time with patients, and increased patients demands can negatively affect the retention of primary care doctors. In this work, the approach taken was the design, with the quantitative survey conducted first. This provided a sampling frame for the qualitative work which, in turn, aided understanding and interpretation of the survey results. As shown in Figure 12, the systematic review underpinned both.

Figure 14 Types of Mixed Methods Research, Adapted From (Creswell and Clark, 2018)

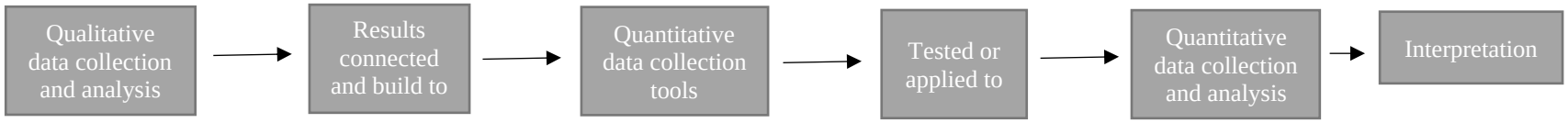
Convergent design:



Explanatory sequential design:



Exploratory sequential design:



To explore such complex and multifactorial phenomena, an explanatory sequential mixed methods research design was selected. A systematic review of the literature was conducted to explore the existing evidence related to the recruitment and retention of primary care doctors and to provide a base for the conduct and analysis of other studies. A quantitative survey of primary care doctors working in Kuwait was conducted to explore their career intentions and future plans. As well as providing insights into the views of a group of primary care doctors, it also provided a sampling frame for the qualitative study. The qualitative study comprised twenty interviews with volunteer participants from the survey respondents to investigate in more depth the issues related to the recruitment and retention of primary care physicians. Each of the three components of this project was analysed separately, and then the main findings of all components brought together for the final analysis and discussion.

2.5.2. Advantages and disadvantages of mixed methods design:

Mixed methods designs combine the strengths of different methodological studies and can offset their weaknesses (Kelle, 2006; Hadi *et al.*, 2013; Creswell and Clark, 2018). Mixed methods studies can also provide more evidence to solve problems and answer questions that cannot be answered by either methodology alone (Hadi *et al.*, 2013; Creswell and Clark, 2018) and can be used for complex research questions (Driscoll *et al.*, 2007; Tariq and Woodman, 2013). New insights can be gained through the use of different paradigms, which is another advantage of using mixed methods designs (Kelle, 2006; Creswell and Clark, 2018).

Creswell and Clark (2018) also described some disadvantages of using mixed methods research design. For instance, they highlighted the need for research skills to conduct both quantitative and qualitative studies and the skills of combining the data and analysis. The same authors also cited the time, resources, and skills needed to conduct mixed methods studies as a disadvantage.

One thing that can help to facilitate the conduct and integration of these different methods, however, is the use of theory which can help to inform the data collection and analysis. This will be discussed in the next section.

3. Theoretical framework:

In this section, the definition of theory and the rationale for using it will be discussed. After a brief review of theories focused on careers, an explanation of the STF and the rationale for using it will be presented.

3.1. Definition and rationale of using a theory:

According to Meleis (2012, P.29) theory can be defined as "an organized, coherent, and systematic articulation of a set of statements related to significant questions in discipline and communicated as a meaningful whole". Theories can be classified into three levels; the first is grand theory, which is abstract and can be used in different subjects and areas (O'Donnell *et al.*, 2017). Mid-range theory represents the second level, which is more specific to certain phenomena, can be tested, and guide the development of interventions. The third level is programme theory, also referred to as small theories, which focus on specific components of interventions, and link inputs to outcomes (O'Donnell *et al.*, 2017).

According to Alderson (1998), theories are the core of the process of planning and conducting research and are essential to healthcare research and practice. Several advantages have been mentioned about using theory in healthcare-related research. Adopting theories in healthcare research can help in formulating research questions, identify the appropriate methods, assist in the analysis, and aid decision makers by providing a detailed explanation of the research results and indicating feasible interventions which might be developed (Brazil *et al.*, 2005). Stewart and Klein (2016) and Kislov (2019) also mentioned that using theories in healthcare research improve the robustness, applicability, and influence of the results. The use of theories in research can also help in explaining complicated and unclear situations (Davidoff, 2019). Leviton and Trujillo (2017) argue that theories can be used in assessing and evaluating complex delivery systems, including healthcare systems.

According to Davidoff et al. (2015), the use of theory can shorten the time needed to develop healthcare interventions, improve their design, identify the context for their success, and provide a chance to learn from the efforts of developing them. They explained that the use of theory helps explain complex situations, test relationships, and define the mechanisms of action of interventions. The same authors also suggested that the use of theories could overcome personal biases and limited views, maximise the use of knowledge and promote their transfer to other projects. Theories can also explain and predict intervention outcomes and enhance their generalisability (Kislov *et al.*, 2019).

However, adopting theories in research comes with its challenges. As mentioned by O'Donnell *et al.* (2017) using theories in healthcare research is challenged by the lack of a clear definition of theory, deciding which theory should be used, the multidisciplinary nature of the healthcare field, and the absence of guidance in employing and applying theories in research.

3.2. Theories of career development:

3.2.1. Definitions:

According to Patton and McMahon (2014), the term career has been defined differently over time. For example, career has been defined as '*the series of jobs that a person has in a particular area of work, usually involving more responsibility as time passes*' or *'the period of time that you spend in your life working or doing a particular thing'* (Oxford Advanced Learner's Dictionary, no date). The ambiguity in career meaning, the existence of different and wide definitions, and lack of conceptual clarity led to developing the notion of career development, as early as 1951 (Patton and McMahon, 2014). To address some of this ambiguity, a definition of career development was established by Wolfe and Kolb (1980) as cited in Patton and McMahon (2014):

> *"Career development involves one's whole life, not just occupation. As such, it concerns the whole person … More than that, it concerns him or her in the ever-changing contexts of his or her life. The environmental pressures and constraints, the bonds that tie him or her to significant others, responsibilities to children and ageing parents, the total structure of one's circumstances are also factors that must be understood and reckoned with. In these terms, career development and personal development converge. Self and circumstances – evolving, changing, unfolding in mutual interaction – constitute the focus and the drama of career development"*

Such a comprehensive definition illustrates the fact that career choices are a continuous and changing process due to the changes in different aspects of peoples' lives, and the definition fits with the aim of this PhD project.

It could be suggested that there is no clear definition of the term 'career' in medicine; instead, many scholars just define the job description of healthcare workers. In an early attempt to describe and define the medical career, Hall (1948) categorised it into four stages: generating the ambition, gaining admission to a medical institution, acquiring and retaining clients, and developing relationships within the field. However, it could be argued that the author simply described the medical career in chronological approach. The WHO (2008b) have defined healthcare professionals job description in their mapping classification to the International Standard Classification of Occupations as:

> *"Health professionals study, advise on or provide preventive, curative, rehabilitative and promotional health services based on an extensive body of theoretical and factual knowledge in diagnosis and treatment of disease and other health problems. They may conduct research on human disorders and illnesses and ways of treating them, and supervise other workers. The knowledge and skills required*

are usually obtained as the result of study at a higher educational institution in a health-related field for a period of 3–6 years leading to the award of a first degree or higher qualification" (P.1)

WHO also provide a definition for professional development:

'Continuing professional development encompasses all of the activities that health workers undertake both formal and informal to maintain, update, develop, and enhance their professional skills, knowledge, and attitudes' (Giri *et al.*, P.1, 2012)

Therefore, it can be suggested that despite the great amount of research about the medical profession, neither the term 'career' nor career development has been defined from a medical perspective.

3.2.2. Philosophical background and understanding of career theories:

Historically career theories have been influenced by the positivist view, which is based on prioritising individual objectivity and facts over subjectivity and feelings (Patton and McMahon, 2014). However, constructivist theories started to emerge over time, which pay more attention to the interaction between the individual and the environment (Patton and McMahon, 2014).

3.2.3. Types of career theories:

Several classifications have been developed to describe the focus of different career theories; these can be broadly defined as theories of content, process, content and process and wider explanations, Table 9 (Patton and McMahon, 2014).

Table 9 Career Theories Subtypes and Examples, Adapted From (Patton and McMahon, 2014).

Theory Classification	Types
Theory of Content	• Trait and Factor Theory - Parsons (1909) • Theory of Personality Holland - (1973, 1985, 1992, 1997); Nauta (2010, 2013) • Psychodynamic Theory - Bordin (1990) • Values-Based Theory - D. Brown (1996, 2002)
Theory of Process	• Developmental Theory - Ginzberg (1951,1972, 1984) • Life Span Life-Space Theory - Super (1953, 1957, 1980, 1990, 1992, 1994); Super et al. (1996); Hartung (2013) • Theory of Circumscription and Compromise - L. S. Gottfredson (1981, 1996, 2002, 2005) • Individualistic Approach - Miller-Tiedeman & Tiedeman (1990); Miller- Tiedeman (1999)
Theories of Process and Content	• Social Learning Career Theory - L. K. Mitchell & Krumboltz (1990, 1996) • Happenstance Learning Theory - Krumboltz (2009, 2011); Krumboltz et al., (2013) • Social Cognitive Career Theory - Lent et al. (1996, 2002); Lent & Brown (2002); Lent (2005, 2013) • Cognitive Information Processing Approach - Peterson, Sampson, Reardon, & Lenz (1996); Peterson Sampson, Lenz, & Reardon (2002); Reardon, Lenz, Sampson, & Peterson (2011) Sampson, Reardon, Peterson, & Lenz (2004) • Developmental-Contextual Approach - Vondracek, Lerner & Schulenberg (1986); Vondracek & Porfeli (2008) • Contextual Approach to Career - Young, Valach & Collin (1996, 2002); Valach & Young (2009); Young, Domene, & Valach (2014) • Personality development and career choice - Roe (1956); Roe & Lunneborg (1990)
Wider Explanations	• Women's Career Development - Astin (1984); Hackett & Betz, (1981); Betz (2005); Farmer (1985, 1997); Betz & Fitzgerald (1987); Cook, Heppner, & O'Brien (2002a, b); Richardson & Schaeffer (2013); Schultheiss (2009, 2013) • Racial and Ethnic Groups - Arbona (1996); D. Brown (2002b); Hackett, Lent, & Greenhaus, (1991); E. J. Smith (1983) • Sexual Orientation - Fitzgerald & Betz (1994); K. Morgan & L. Brown (1991) • Sociological or Situational Approaches - Roberts (1977, 2005, 2012); Blau & Duncan (1967); M. J. Miller (1983); Hotchkiss & Borow (1996); Johnson & Mortimer (2002)
Constructivist /Social Constructionist Approaches	• Systems Theory Framework - McMahon & Patton (1995); Patton & McMahon (1997, 1999, 2006) • Career Construction Theory - Savickas (2001, 2002, 2005, 2011, 2013) • Chaos Theory - Pryor & Bright (2003, 2011) • Ecological Approach Narrative - Conyne & Cook (2004) Bujold (2004); L. Cochran (1997); McIlveen & Patton (2007) • Relational/Cultural - Blustein (2001, 2006, 2011); Schultheiss (2009) Schultheiss (2013) • Contextual Action Theory

Theories of content are those discussing the factors influencing individuals' career development and decisions in relation to intrinsic factors or those within their personal life, such as achievements, values, or personality, for example The Trait and Factor Theory and The Theory of Personality. Process theories focus on contextual factors, such as the family and society, addressing the changes and interactions over time that can affect the individuals' career; for example The Life Span Life-Space Theory and The Theory of Circumscription and Compromise (Patton and McMahon, 2014). Other theories have taken into account both content and process. Developing this, wider explanations that may also be important, including gender, racial, and socioeconomic status, have also been developed (Patton and McMahon, 2014). According to the same authors, several more recent theories have been established which take a constructivist approach to understanding what a career is, which assumes that the person is at the centre of different factors that can affect their career. This gives the opportunity to consider a wide range of personal, social and system level factors that might influence an individual's decisions about their career and which might change over time and stage of career.

To understand the difference between the content, process, and content and process theories, an example will be given for each of them. An example of content theory is The Personality Theory or Theory of Vocational Personalities that was developed by Holland in 1959 and evolved through time (Nauta, 2010). This theory's main concept is that individuals have a combination of six personality types: realistic, investigative, artistic, social, enterprising, and conventional, with each type characterised by specific values, interests, beliefs and other factors (Nauta, 2010). Holland used this to establish a test that determines suitable work environments for each personality type.

The Life-Span, Life-Space Theory of Careers, is an example of a process theory. This theory, developed by Donald Super in 1953, examines career choices and development through three main elements: life-span, life-space, and self-concept (Hartung, 2013). The life-span component accounts for the chronological aspect of a career and the developmental stages each person goes through over time. While the life-space element represents the effect of contextual and psychosocial factors, the self-concept represents the individual's opinion or view about his/her role in a job or mental representation of themselves (Hartung, 2013).

Among the theories that have both content and process elements is The Social Cognitive Career Theory. The theory included factors related to the individual and accounted for the environment and contextual factors that were presented as models: academic and career interest, choice, performance, and satisfaction models (Lent, 2013). Each model accounts for either or both personal and contextual factors that can have

an effect; for example, the model of career choice behaviour included personal factors, such as gender, race, and health issues, and contextual factors.

Thus, there are several theories that try to explain the individual or contextual factors that can affect a person's career. However, it can be suggested that each theory focused on a specific aspect; content theories mainly focused on the individual factors without accounting for the effect of time and environmental factors. Process theories discuss the importance of development over time of individual factors and some contextual factors. Theories that have both content and process elements try to cover both individual and contextual factors. Yet, most theories miss potentially important elements, such as sexual orientation, race/ethnicity, and the effect of broader contextual factors such as globalisation and geographical location. Such deficiencies were addressed by the STF, a metatheoretical framework that attempts to provide a collective framework that covers all elements of career theories.

4. Systems Theory Framework (STF):

4.1. Background:

The previous section shows the complexity and the overlap between career theories that have been noted by several scholars (Chen, 1998; Patton and McMahon, 2014; Juntunen, Motl and Rozzi, 2019). Such complexity led to the suggestions of career theories convergence, primarily by Osipow (1990), which was then followed by other academics such as Savickas and Lent (1994) as cited in Pryor and Bright (2003) and Chen (1998). Such a call was to incorporate most of the elements and components of theories in a single theory:

> *"The vigor of the career development field is impressive. One testimony to its strength and validity is the tendency toward convergence of its major theories into a coherent whole, while at the same time the maintenance of important and useful distinctive applications and features of each approach"* (Osipow, 1990. p.130)

The call for career theories' convergence, is a notion that is supported by Pryor and Bright (2003) and Chen (2003).

4.2. Rationale:

The adoption of STF in this PhD project came after thorough research looking for an appropriate theory or framework, which was conducted by searching different bibliographic databases, reading key papers and books, and searching the web and grey literature. The main reason for choosing it was that it is considered

as a metatheoretical framework that covers much of the content of career theories described in the previous section. According to Patton and McMahon (2014):

> *"The Systems Theory Framework is not designed to be a theory of career development; rather systems theory is being introduced as the basis for an overarching, or metatheoretical, framework within which all concepts of career development described in the plethora of career theories can be usefully positioned and utilized in theory and practice"* (242)

Therefore, the framework included almost all of the elements of career development theories. The framework is also organised in a systematic way, outlining a hierarchical relationship between the three subsystems and their components.

The fact that it is a metatheoretical framework assisted in examining the different factors that influence the recruitment and retention of primary care doctors in Kuwait; for example, the individual and contextual factors. STF had also been used in other work examining career decision making (Zimmerman and Kontosh, 2007). Another reason is that the systems thinking adopted by Patton and McMahon (2014) in developing the STF was advocated by the WHO in studying health systems including workforce analysis (WHO, 2009), and was used in the analysis of several healthcare studies (Gilson *et al.*, 2014; Paina *et al.*, 2014; Manley *et al.*, 2016). Finally, a study was conducted using the STF in examining the career development of residents in the internal medicine training program in Singapore (Kua *et al.*, 2018), which showed the applicability of STF in healthcare research.

Other theoretical frameworks were initially considered; for example, the determinants job mobility theoretical framework (Ng *et al.*, 2007). This framework explores the factors affecting job mobility, including structural factors (economic conditions, societal characteristics, industry differences, and organisational staffing policies), individual factors (personality traits, career interests, values, and attachment styles, and decisional factors (subjective norms, the desire and readiness of mobility) (Ng *et al.*, 2007). The framework also linked structural factors with the availability of mobility options, the individual factors with the preferences of mobility options, and decisional factors with the intention to engage in a career change. The framework also positioned structural factors on a macro level and individual differences and decisional factors on a micro level. However, when comparing the two, the STF was found to be more informative and detailed in terms of the factors included in each subsystem. The STF is also more organised and more precise in the hierarchical relationship between the subsystems. Another advantage of the STF is that it addresses the effects of time, change, and chance, all of which were important when considering decisions made over the career trajectory.

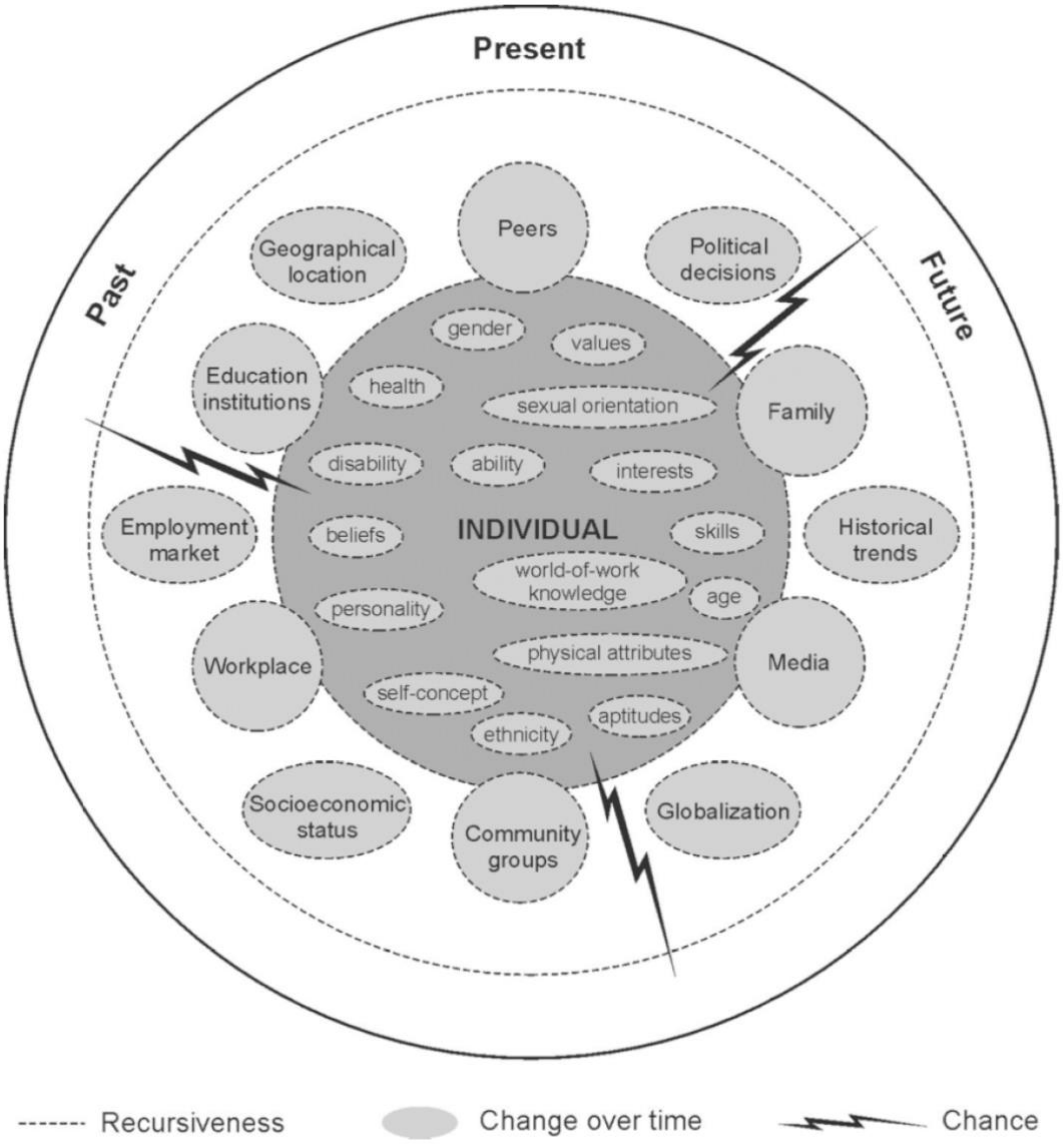
4.3. Explanation of STF:

The STF combined the two main components of career theories, content and process. Individual factors are at the centre surrounded by the key contextual influences that represent the content; while the process component is represented by the recursive nature of the interactions between all of the components, including change over time, and the element of chance, Figure 15 (Patton and McMahon, 2014).

The individual system consists of sixteen components: gender, values, health, sexual orientation, disability, ability, interests, beliefs, skills, personality, world of knowledge, age, self-concept, physical attributes, ethnicity, and aptitudes (Patton and McMahon, 2014). Many of these components are cited in other career theories; however, Patton and McMahon (2014) added gender, ethnicity, and sexual orientation, which they suggested, were rarely included. One factor not mentioned in their final STF framework was spiritualty, although they suggested that it could also be included in the framework if needed.

Contextual influencers were divided into two subsystems: the social and environmental-societal systems. In this model, the social system is considered the microsystem and represents the influencing role of close factors around the individual; the environmental-societal systems are regarded as operating at a higher level and demonstrate the important role of both the environment and society on the individual, Figure 15 (Patton and McMahon, 2014). Both are considered to have six components. For the social system, these are: peers, family, media, community groups, workplace, and education institutes; the environmental-societal systems also covers: political decisions, historical trends, globalisation, socioeconomic status, employment market, and geographical location, Figure 15 (Patton and McMahon, 2014).

Figure 15 Systems Theory Framework for Career Development, Reproduced From (Patton and McMahon, 2014).



In terms of the process factors, Patton and McMahon (2014) identified three: recursiveness, change over time, and chance. Since STF considered all of the included systems as open systems, recursiveness signifies the ongoing, non-linear, mutual, and multidirectional interaction between the included factors (Patton and McMahon, 2014). The authors also mentioned the role of change over time in career development as a key influence, especially in decision-making as it is a continuous and ongoing process. The final process influence is the element of chance, which Patton and McMahon (2014) acknowledged to be of major importance.

The final section of this chapter will discuss the ethical considerations of this PhD project, which concerned two out of its three main studies.

5. Ethical considerations and confidentiality:

Ethical approval to distribute the surveys and to conduct the interviews was obtained from the College of Medical, Veterinary and Life Sciences (MVLS) Ethics Committee at the University of Glasgow and the Standing Committee for Coordination of Medical Research in K-MOH, Appendices 1, 2, 3. All participants in both the survey and interview phases received an informed consent document and a participant information sheet explaining the details of each study and indicating their freedom to participate in the research, Appendices 4, 5, 6.

Several ethical considerations were faced during this PhD project. All of the surveys were distributed with the assistance of the primary care centre managers or their secretaries, which might have led to some pressure on the doctors to complete them. However, this was tackled by the explanation given in the participants' information sheet and consent forms that they did not have to participate and could also choose to leave at any time during the project. It was also made clear that they could speak, in confidence, to myself if they needed more information.

As in the quantitative study, participants volunteering to be involved in the qualitative study had the freedom to quit at any time even during and after the interview was conducted, which was explained in the participants' information sheet and consent form. A few participants asked about the recording before the interview. After explaining how the recording would be dealt with, all of them agreed on their interview being recorded.

The third consideration is the anonymity, data handling and storage. All of the surveys were coded to ensure the anonymity of the participants and the surveys were kept in a secure and locked facility. Interviews were transcribed by professional transcribers at the department of general practice and primary care in the University of Glasgow, and audio recordings were deleted after transcription. Transcripts were kept in a safe and locked facility; electronic copies were stored on a secure University of Glasgow server. In accordance with regulations, data will be stored for 10 years.

6. Summary:

This chapter presented the methodological approaches adopted by discussing the mixed methods approach and the rationale for using it. The importance of using theoretical frameworks in research was also discussed. The chapter discussed career theories in general, focusing on the STF and the rationale of adopting it in this project. Finally, ethical considerations and the process of obtaining ethical approvals were demonstrated.

Chapter Five: Systematic Review of The Literature

1. Introduction:

This chapter presents a systematic review of the literature, which was conducted to understand the factors influencing the recruitment and retention of primary care doctors. First, the rationale for conducting a systematic review will be explained. The details of the methodological approach used will then be described. The results and their analysis will be presented, with analysis guided by the STF (Patton and McMahon, 2014). Finally, the strengths and limitations and policy implications of the systematic review will be discussed.

2. Rationale:

According to the Cochrane Collaboration (2011), a systematic review aims to collect all the empirical evidence for a specific question according to pre-determined criteria and through using systematic methods that reduce bias to provide a reliable conclusion. Systematic reviews are essential for health workers, policymakers, researchers and the general population as they provide summarised, updated and appraised information. Bambra (2011) suggested that systematic reviews are a useful research method in public health research as they aid in appraising and synthesising the evidence.

As discussed in chapter (3), there is good evidence that shows the shortage and leakage of primary care physicians in different countries. Conducting a systematic review was an important step to start the PhD, providing a solid base of up to date information, using data collected in a replicable and systematic method. Another rationale was that many of the studies identified did not answer this PhD research question. Several studies focused only on rural areas (Marchand and Peckham, 2017), or had some limitations regarding the included studies. For instance, Marchand and Peckham (2017) only included studies conducted in OECD countries, and Verma *et al.* (2016) focused on studies conducted in high-income countries. Such a focus, however, was a potential limitation as it may have excluded countries with a similar culture or medical system as in Kuwait.

3. Aims, objectives, and research questions:

The main aim of conducting this systematic review was to examine the evidence regarding the factors that affect the recruitment and retention of primary care physicians in urban settings. Therefore, the review question was established as follows: *What factors affect the recruitment or retention of primary care physicians in urban settings?* To answer the research question, three objectives were set:

- To review the existing literature on the factors that increase or decrease the recruitment of primary care physicians in urban areas.
- To review the existing literature on the factors that increase or decrease the retention of primary care physicians in urban areas.
- To compare the factors that affect the recruitment and retention of primary care physicians across different countries in urban areas.

4. Methodology:

4.1. Protocol:

The process of developing the systematic review protocol started with several scoping searches of the literature that aimed to give a general idea about the existing evidence related to the developing research question. After discussions with the supervision team, the final protocol was revised and approved by the supervision team. This protocol was submitted to International Prospective Register of Systematic Reviews (PROSPERO), an international register of systematic reviews. A copy of the submitted protocol is available in (https://www.crd.york.ac.uk/PROSPERO/export_details_pdf.php). We report our methods paying attention to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) criteria (Moher *et al.*, 2009).

4.2. Search strategy:

The search strategy was developed with the assistance of a medical librarian at the University of Glasgow and revised by both supervisors. The involvement of the librarian helped to create a comprehensive search strategy through choosing the proper databases and search terms. The search was developed to cover the following areas: setting (primary care or general practice or family medicine) AND terms for doctors (general practitioner or GP or primary care physician etc.) AND terms for recruitment (employment or employment status or recruit etc.) OR terms for retention (personnel turnover or job satisfaction, burnout, etc.) OR terms for leaving the practice (career mobility, career interruption, change job, etc.). The searches were conducted in MEDLINE, EMBASE, Web of Science, Cochrane and PsychInfo databases and covered the timeframe January 2000 to April 2017, as this was the time when recruitment and retention issues began to receive more attention. The full search strategy is available in Appendix 7. In addition, relevant BMC Series Journals, the British Medical Journal (BMJ), BMJ Open, and the British Journal of General Practitioners (BJGP) were searched manually for the last five years for any missed articles. The search was updated at the end of February 2020.

4.3. Inclusion and exclusion criteria:

4.3.1. Population studied:

This study focused on GPs, family physicians and primary care doctors that work in non-hospital settings in urban areas. In some countries, the term "primary care physicians" represent different specialities such as paediatrics, internal medicine, and obstetrics and gynaecology; these papers were excluded. In addition, some studies examined several health workforces; for example, doctors, nurses and community health workers. Such studies were excluded. Research articles that reported on doctors in primary care training and aimed to examine their recruitment and retention choices were included. However, research articles examining the opinions of medical students about pursuing a career in family medicine or assessing interventions aimed to improve the recruitment of medical students into primary care were excluded.

4.3.2. Types of studies:

Journal articles published in English from 2000 onwards were considered for inclusion. Empirical research, conducted through qualitative, quantitative, mixed methodologies, and systematic reviews that aimed to investigate the factors affecting the recruitment and retention of GPs were included. There were no limitations regarding the physicians' demographic factors such as age, gender, nationality, or country of practice. Research articles investigating the recruitment and retention of GPs in urban deprived and underserved areas were included.

Studies discussing retirement plans at normal retirement age, intentions or actions were excluded as this can be seen as a normal process of all employees. However, articles exploring the causes of early retirement were included. Since this systematic review was part of a bigger project that focused on primary care in mainly urban settings and because in Kuwait almost all primary care centres are in urban areas, studies that investigated recruitment or retention of GPs in remote or rural practices were excluded.

Commentary, opinion, discussion and editorial articles were excluded, as were studies reporting the rates and numbers of medical students choosing primary care as a speciality. Finally, articles that studied burnout or satisfaction of primary care physicians were included only if these issues were investigated in relation to recruitment or retention. The inclusion and exclusion criteria are detailed in Table 10.

Table 10 Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
• English Language • Empirical data-driven studies • Published from 2000 onwards • Qualified or in-training GPs working in a non-hospital setting • Studies examining the recruitment of GPs in underserved or deprived areas.	• Studies focused on remote or rural areas • Medical students' opinions about primary care • Studies examining active recruitment programs during medical school • Commentaries, opinion pieces, discussions and editorial articles • Studied with mixed populations (GPs and nurses or other medical professions) • Articles without a clear aim, method, and analysis

4.4. Screening:

The process of study selection started by screening the titles followed by the abstracts and finally by reviewing the full-text of articles that could not be excluded or included based on title and abstract. Initially, search results were uploaded to Endnote and duplicates removed. Articles were then uploaded to the review management software DistillerSR. The titles were screened by two reviewers (Abdulaziz Alhenaidi (AA) and Catherine O'Donnell (COD) or Jillian Morrison (JM)). Any disagreements were discussed by the two reviewers, and if not resolved the third reviewer was consulted. The same process was carried out for reviewing the abstracts and full-text articles. Figure 17.

4.5. Risk of bias (quality assessment):

Quality assessment was conducted by two authors AA and COD or JM using Critical Appraisal Skills Programme (CASP) checklists (https://casp-uk.net/casp-tools-checklists/) for observational studies, reviews/systematic reviews, and qualitative studies. Additional appraisal criteria for questionnaires, e.g. response rate, were drawn from the Effective Public Health Practice Project (EPHPP) tool (EPHPP, 2010). Mixed methods studies were appraised using the Mixed Method Appraisal (10) tool (Hong *et al.*, 2018) tool. The quality assessment was not used to exclude any studies; however, it was a useful tool for evaluating the robustness of the evidence during interpretation. This process was done by importing the CASP checklists of the qualitative studies and creating a checklist for quantitative studies, in DistillerSR software. Quality appraisal was done by two reviewers, AA and COD or JM. Any disagreements were discussed by the two reviewers and if not resolved the third reviewer was consulted. For all papers, a final score was determined, in which studies with no poor score on the checklist were evaluated as good, studies with one poor score were labelled as fair, and articles with two or more poor scores were evaluated as poor. Appendices 8, 9, 10, and 11 show the checklists used.

4.6. Data extraction:

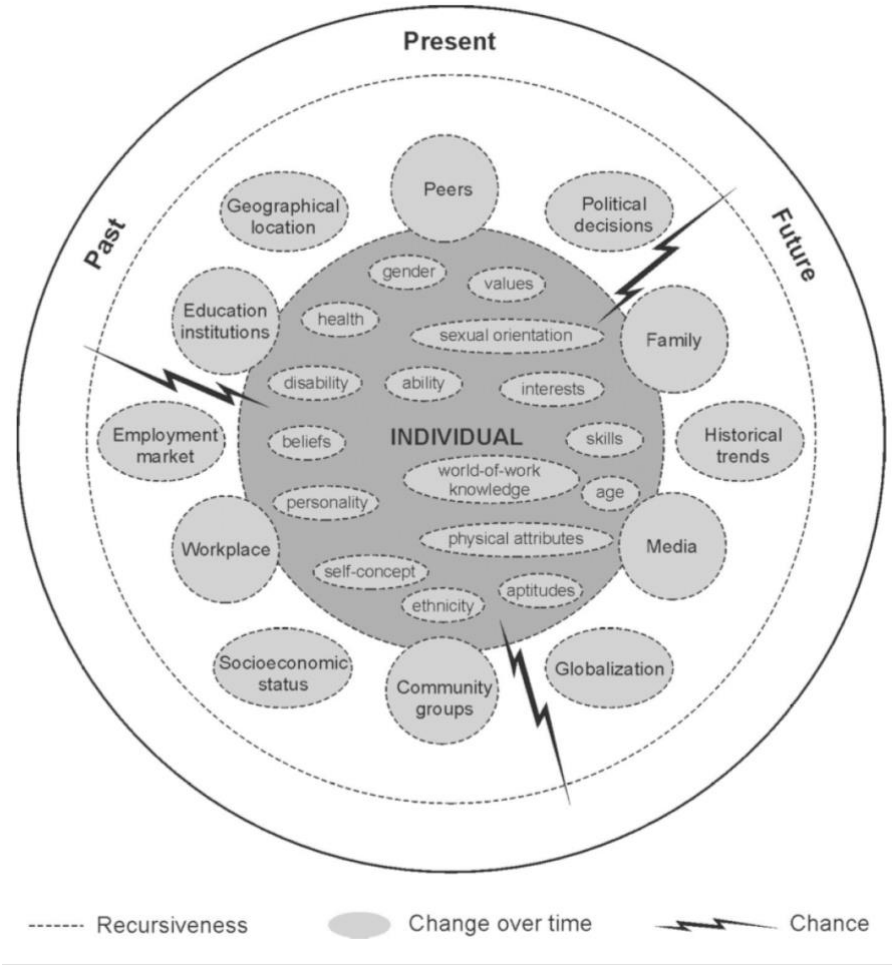
Data extraction for the included studies was done in two steps. The first step extracted basic information about each of the included studies: study citation, study design, data collection method, sample size, the location where it was conducted, granted ethics approvals, key findings and limitations. This was carried out in Distiller SR.

A thematic analysis was then conducted in which each of the 65 included articles was considered as a piece of qualitative data. Each paper was read closely by AA. Data relating to factors supporting or hindering recruitment or retention were extracted from each paper and assigned to themes. These thematic extracts were then mapped to domains of the STF, Figure 16. Data extraction was facilitated using extraction pro-formas; a 20% sample of papers and pro-formas were then read by COD to ensure coding consistency. An example of one of the included data extraction sheets is available in Appendix 12.

4.7. Theoretical coding and data synthesis:

A thematic analysis was undertaken using the STF (Patton and McMahon, 2014). As mentioned in chapter (4) and illustrated in Figure 16, the STF identifies three inter-related systems: the individual system, which contains the factors related to gender, sexual orientation, age, ethnicity, values, beliefs, health, disability, ability, interests, skills, world of knowledge, personality, self-concept, physical attributes, and aptitudes. The social system has six components that are peers, family, media, community groups, workplace, and education institutes. The environmental-societal system includes six factors: political decisions, historical trends, globalisation, socioeconomic status, employment market, and geographical location. Initially, the results will be presented according to the aim of the studies and then analysed in detail according to the STF.

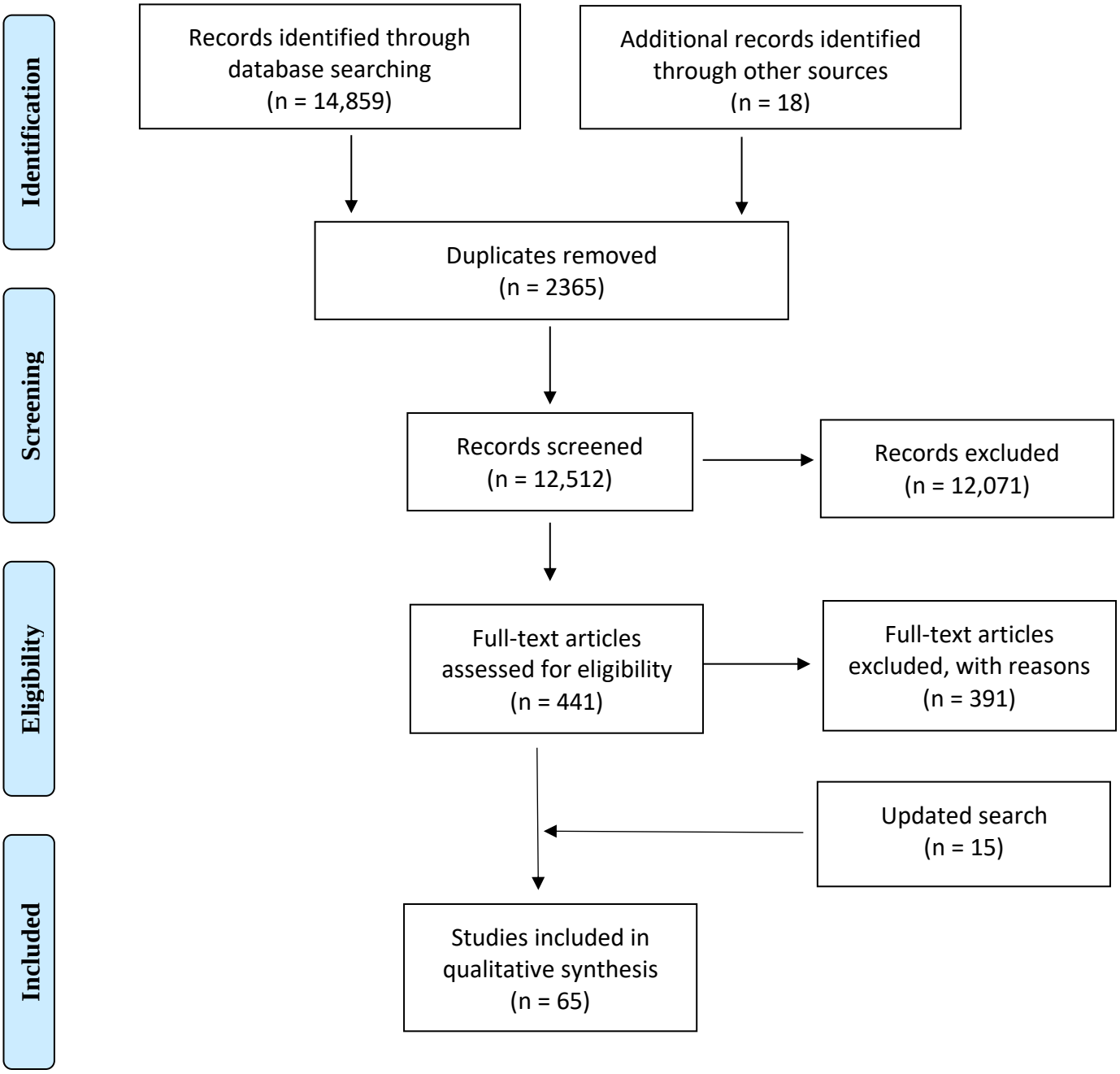
Figure 16 Systems Theory Framework for Career Development, Reproduced From (Patton and McMahon, 2014)



5. Results:

Out of the 14859 results yielded by applying the search strategy, which were uploaded to DistillerSR software, and conducting a manual search of relevant BMC Series Journals, the BMJ, BMJ Open, and BJGP journals, 50 studies were included. The updated search resulted in additional fifteen studies added, and included papers became 65. Figure17 illustrates the flow and process of the studies screening, inclusion, and exclusion.

Figure 17 Adapted PRISMA Flow Chart



5.1. Overall characteristics of the studies:

Table 11 details the included studies. Most were conducted in high-income countries, mainly Europe, and especially the UK (36 studies), followed by Finland (n=4), Switzerland (n=4), and Denmark (n=2). Three studies were done in China. Other countries reporting one study each were: Belgium, France, Ireland, the Netherlands, Brazil, U.S, Canada, Israel, Qatar, Egypt, and Lebanon. Two studies were conducted in multiple European countries. Finally, three systematic reviews were included; one was focused on the OECD countries and two on high-income countries. Thirty-eight studies were published in the period between 2013 and 2020, ten from 2008 to 2012, and seventeen studies between the year 2000 and 2007.

The majority of the studies were quantitative (n=39), 12 were qualitative, and seven mixed methods. There were also three systematic reviews and four studies were labelled as other methodology. Of those labelled as other methodology, the study done by Lorant *et al.* (2011) was conducted through stakeholders priorities assessment. The study by Wordsworth *et al.* (2004) was a discrete choice experiment, Dale *et al.* (2016), conducted a secondary analysis of qualitative comments of a survey, and the final study, which was done by Chilvers *et al.* (2019), used the Delphi method.

5.2. Quality appraisal:

Out of the 39 quantitative studies, 15 studies were evaluated with a good rating, 14 studies received a fair rating, and ten had a poor rating. Among the 12 included qualitative studies, ten received good and two were rated as poor. Regarding the mixed methods studies, three were rated as fair and four rated as poor. In relation to systematic reviews, two was labelled as fair and one were rated as poor. Finally, the four studies that were labelled as other methodology were not appraised as appropriate checklists were not available.

5.3. Key findings of the studies:

In this section, the key findings of the systematic review will be presented according to their aim in assessing the recruitment or retention of primary care doctors. The papers are summarised in Table (11).

5.3.1. Recruitment:

Of the 65 included studies, 32 focused, either entirely or partially, on the recruitment of primary care physicians. Key issues that were reported in relation to recruitment were: work-life balance, doctor-patient relationship, working hours and workload, job autonomy, income, medical school, postgraduate training, and knowledge and skills.

Several studies reported on why doctors chose primary care as a career. The studies by Roos *et al.* (2014), Merrett *et al.* (2017), Blades *et al.* (2000), Alberti *et al.* (2017), and Lillevang *et al.* (2019) mentioned that the perception of a good work-life balance in primary care influenced doctors in training to choose it as a career. Friedberg and Glick (2000), Buddeberg-fischer, Klaghofer and Stamm (2011) identified the human aspect and the patient relationship was an important factor for choosing primary care. Important job-related factors included GP autonomy and the "holistic approach" (Roos *et al.*, 2014). Working hours and working conditions were cited by Lambert *et al.* (2012), Lillevang *et al.* (2019), and Spooner, Laverty and Checkland (2019). Wordsworth *et al.* (2004) mentioned that GPs preferred jobs with reduced working hours, no out-of-hours commitments, and longer consultation length.

Merrett *et al.* (2017) and Wordsworth *et al.* (2004) identified pay as a factor that encouraged junior doctors to choose primary care. One paper demonstrated that the incentive provided in salaried contracts, in the form of a reduction in working hours and freedom from administrative tasks could aid in GPs recruitment (Williams *et al.*, 2001).

Seven studies identified experiences in medical school as an influence on choosing primary care as a career (Buddeberg-fischer, Klaghofer and Stamm, 2011; Lorant *et al.*, 2011; Elkhawaga, Bernard and El-Gilany, 2015; Verma *et al.*, 2016; Alberti *et al.*, 2017; Marchand and Peckham, 2017, Alameddine *et al.*, 2017). While Verma *et al.* (2016) and Lillevang *et al.* (2019) highlighted the role of postgraduate exposure and selective recruitment of medical students, Marchand and Peckham (2017) cited the balance between skills and attributes and experience in primary care settings as important recruitment factors. Other encouraging factors identified by Buddeberg-fischer, Klaghofer and Stamm (2011) and Elkhawaga, Bernard and El-Gilany (2015) were the short duration of the training program and the positive opinion of primary care physicians, respectively. Spooner *et al.* (2017) found that junior doctors speciality choice was based on multiple factors including the workload encountered during training.

Educational support groups for sessional GPs and the presence of an educational environment were cited as factors that encouraged recruitment (Jenson, Hutchins and Rowlands, 2006; Lillevang *et al.*, 2019). The broad range of conditions seen in primary care, having a fulfilling career, the doctor-patient relationship, and continuity of care were identified as attractive factors (Blades *et al.*, 2000; Buddeberg-fischer, Klaghofer and Stamm, 2011; Roos *et al.*, 2014, Lillevang *et al.*, 2019). However, one study identified job content as the main reason to reject a career in primary care including: lack of acute problems, dull speciality, lonely speciality, and too much administration and bureaucracy (Lambert *et al.*, 2012). Specific recruitment programs were mentioned as an enhancing factor (Studerus *et al.*, 2018; Lee and Cunningham, 2019).

Factors which discouraged doctors from choosing primary care were the perceived low autonomy, high costs of opening a practice, and the limited availability of practice licences (Buddeberg-fischer, Klaghofer and Stamm 2011). Merrett *et al.* (2017) identified future uncertainties in the UK around training and payment and perceived stigma as discouraging factors. Alberti *et al.* (2017) identified negative comments about workload, being "just a GP", waste of training and a "second-class career" were all reasons that discouraged doctors from choosing primary care.

Some studies examined some of the wider system aspects which influenced choosing a career in primary care. In a survey of family medicine programme directors in the U.S, increasing primary care doctors' payment was suggested as a way to improve recruitment (Carek *et al.*, 2012). Merrett et al. (2017) and Wordsworth et al. (2004), both studies based in the UK, identified pay as a factor that encouraged junior doctors to choose primary care. Lorant *et al.* (2011), identified practice organisation and training policies as the most important recruitment factors in Belgium. In a similar context, Jenson, Hutchins and Rowlands (2006) found that type of post and contract were important GP recruitment factors. Among the hurdles mentioned to recruit primary care doctors were poor management, financial constraints, and suboptimal supply of human resources (Alameddine *et al.*, 2016). One paper demonstrated that the incentive provided in salaried contracts, in the form of a reduction in working hours and freedom from administrative tasks could aid in GPs recruitment (Williams et al., 2001).

Three studies assessed trends in the attractiveness of a primary care career choice, with all of them finding a reduction in its attractiveness overtime (Lambert, Evans and Goldacre, 2002; Buddeberg-fischer *et al.*, 2006; Lambert, Smith and Goldacre, 2017). However, some factors did appear to encourage recruitment. Graduate entrants to medical schools were more likely to choose primary care (Lambert *et al.*, 2001). One study found that having parents with routine or semi-routine jobs increased the likelihood of working in deprived practices (Dowell *et al.*, 2015).

5.3.2. Retention:

Forty-nine articles examined primary care doctors' retention. In the study done by Roos *et al.* (2014), primary care doctors reported high satisfaction and did not regret their career choice. Primary care doctors who chose primary care after trying another speciality were more likely to report having a satisfying career (Lambert, Smith and Goldacre, 2013). In three studies, primary care doctors reported that they would like to stay in their jobs (Murphy *et al.*, 2003; Kelley *et al.*, 2008; Zou *et al.*, 2015). Most general practice registrars or recently graduated primary care doctors cited their intention to work in primary care after their training (Bowler and Jackson, 2002; Lloyd and Leese, 2006; Tandjung *et al.*, 2013; Dale *et al.*, 2017).

Despite their positive views about their career, primary care doctors' negative perceptions of their career choice tend to increase after graduation (Lambert, Smith and Goldacre, 2016). Sumanen *et al.* (2012), Dale *et al.* (2015), Fletcher *et al.* (2017), Gan *et al.* (2018), Wen *et al.* (2018), and Owen *et al.* (2019) showed that many primary care doctors are planning to quit their jobs, approximately 50%, 82%, 39%, 78%, 42%, and 18% respectively; the differences in the percentages could be because these studies were conducted in different countries and provinces, and/or because of variations in sample size and response rates. Factors contributing to this included burnout, job dissatisfaction, and workload (Soler *et al.*, 2008; Hann, Reeves and Sibbald, 2011; Gan *et al.*, 2018; Wen *et al.*, 2018; Owen *et al.* 2019). Public primary care doctors have higher psychological stress and quitting decreased such stress (Heponiemi *et al.*, 2012). Among reported reasons for quitting a primary care career were workload and high patient expectations and demands (Young, Leese and Sibbald, 2001; Leese *et al.*, 2002; Doran *et al.*, 2016; Napier and Clinch, 2019). Another factor was the negative media image of primary care in the media, which enhanced primary care doctors intentions to leave (Doran *et al.*, 2016). Organisational changes were also mentioned as a cause to leave primary care (Young, Leese and Sibbald, 2001; Doran *et al.*, 2016). Primary care doctors also mentioned other causes of leaving such as geographical mobility and working hours (Young, Leese and Sibbald, 2001). Poor work-life balance as a trainee and negative perceptions by politicians also had a negative effect on GPs' career intentions (Dale *et al.*, 2017). Dale *et al.* (2015) also cited that workload, lack of job satisfaction, and working hours are the main reasons for leaving primary care. Another reason for leaving raised by GPs in England was the appraisal and revalidation process (Dale *et al.*, 2016). Similar issues emerged in Finland, with intentions to leave primary care high among Finnish GPs because of job demands and stressors, especially among foreign-born doctors (Kuusio *et al.* (2013).

These issues have led to an increase in the number of primary care doctors thinking of retiring early (Sibbald, Bojke and Gravelle, 2003; Sansom *et al.*, 2016). However, there are ways of overcoming these intentions. In a comparison over two-time intervals in the Netherlands, Van Greuningen, Heiligers and der Velden (2012) found that fewer primary care doctors retired because of a reduction in working hours. A retention scheme in Scotland aimed at those intending to leave reduced the number leaving (Chambers, Colthart and Mckinstry, 2004). In a similar context, Hutchins *et al.* (2006) showed that a returner scheme provided a supportive environment for those who had left, but wished to return.

Lorant *et al.* (2011) explored stakeholders opinions in Belgium about effective retention policies and found that organisation and training policies were the most preferred. Alameddine *et al.* (2016) concluded that the hurdles primary care workers faced in Lebanon are poor working environments, financial constraints and lack of professional development. Jenson, Hutchins and Rowlands (2006) support the same notion by mentioning that educational groups can increase primary care doctors' retention in the UK. Also, fair

treatment of primary care doctors in Finland in their workplace might increase their retention (Heponiemi *et al.*, 2013). The systematic review by Marchand and Peckham (2017) showed that sub-specialisation, portfolio careers and job satisfaction were the most important factors for primary care doctors' retention. Other studies also identified lack of job satisfaction as a cause of leaving primary care (Andersen, Pedersen and Waldorff, 2018; Gan *et al.*, 2018; Wen *et al.*, 2018; Napier and Clinch, 2019; Owen *et al.*, 2019; Long *et al.*, 2020)

According to Kinouani *et al.* (2016), young GPs in France choose private or salaried practice depending on occupational factors, postgraduate training, interests, work-life balance, and the prior experience of working as a locum. In addition, GPs prefer jobs with longer consultations, fewer working hours, and a higher income (Wordsworth *et al.*, 2004). A survey conducted by Spooner *et al.* (2017) found that up to 30% of physicians were switching from primary care as a result of the 2015 National Health Services (NHS) contract.

Table 11 Summary of Included Studies in The Systematic Review

Citation	Methodology	Sample	Location	Aims	Focus	Main Findings
1. (Blades *et al.*, 2000)	Quantitative (cross-sectional)	Responses were received from 76% of the 147 ex-GP registrars and 63% of the 100 pre-registration house officers	UK	To identify the major factors that determine the career choice of pre-registration house officers and ex-GP registrars and to identify those that are either attractive or discouraging to potential entrants to careers in medicine, and general practice in particular.	Recruitment and Retention	Both pre-registration house officers and general practitioner registrars agree on several desirable and undesirable factors that define their ideal career. These relate to fulfilling clinical work and preservation of a meaningful personal life. Many young doctors regret their choice of medicine as a career because of poor job conditions and stress and perceive career advice as inadequate. GPs' influence over junior doctors at the time of their career decision making is very limited compared with that of consultants.
2. (Friedberg and Glick, 2000)	Quantitative (Cross-sectional)	135 medical graduates	Israel	To investigate factors underlying our graduates' career choices	Recruitment	The most important factor in choosing primary care was the physician–patient relationship and human aspects of medicine
3. (Lambert *et al.*, 2001)	Quantitative (Cross-sectional)	5547 doctors who qualified in the UK in 1993 or 1996.	UK	To determine whether graduate entry to medical school, taking an intercalated degree during medical school, and age at entry to medical school are related to the choice of an eventual career	Recruitment	There was no evidence of an association between age at entry to medical school and choice of eventual career. Graduates at entry to medical school were a little more likely than non-graduates to choose general practice but the relationship was not a strong one.
4. (Williams *et al.*, 2001)	Mixed (document review + survey)	46 employment contracts + 43 Personal medical services sites actively recruiting a salaried GP	UK	To compare the work incentives of salaried with standard GP contracts; assess recruitment success to salaried posts; and describe the types of GPs attracted to these new posts	Recruitment	Salaried contracts offer positive incentives to recruitment in terms of reduced hours of work and freedom from administrative responsibility. Recruitment success was similar to that achieved by inner city practices generally.
5. (Young, Leese and Sibbald, 2001)	Mixed (Survey + interviews)	613 GP surveys + 32 semi-structured interviews of GP principal leavers	UK	To explore the employment arrangements needed to recruit new GPs and the effective use of the currently working GPs	Recruitment and Retention	Survey: most cited personal factor to leave was nearing retirement. Other personal factors were administrative workload, dissatisfaction with NHS changes, high patients' expectations and clinical workload. Young GPs cited better work-family balance and geographic location as important factors. Also, GPs expressed the preference of salary payment. Interviews Key themes: the need for work-time flexibility, difficulty accommodating geographic mobility, and wage flexibility.

6. (Bowler and Jackson, 2002)	Quantitative (Cross-sectional)	373 GPs	UK	Study of the experiences and career intentions of GP registrars in south east England	Retention	Most registrars were satisfied with their training. 94% intended to work in general practice in the UK at some stage in their career, 1% did not intend to do so, and 4% were undecided. Overall, 74% intended to take a GP job immediately after training.
7. (Evans, Lambert and Goldcare, 2002)	Mixed - methods study	4 cohort surveys (1994, 1995, 1998, 1999) 4525 comments of 13603 medical graduates	UK	To report respondents' comments about general practice	Recruitment and Retention	Key themes: Training, Recruitment problems, Changes to general practice, Retention difficulties
8. (Lambert, Evans and Goldacre, 2002)	Quantitative (cohort)	UK medical qualifiers in 1974, 1977, 1983, 1988, 1993, and 1996 (2620)	UK	To compare recruitment trends in cohorts defined by year of qualification and to report attitudes of young doctors about the attractiveness of a career in general practice	Recruitment	Patterns of entry into and commitment to UK general practice are changing. Fewer young doctors are choosing and entering general practice. The 1996 cohort, however, took an encouragingly positive view of the attractiveness of careers in general practice.
9. (Leese *et al.*, 2002)	Quantitative (Cross-sectional)	621 GP principals	UK	To explore gender and career-stage differences in factors affecting GP retention, and to draw out lessons for enhancing the stock of GPs across the UK and Europe.	Retention	The most important reasons for leaving a GP principal post were high administrative and clinical workload and high patient expectations. Amongst younger leavers, lack of flexible hours and GP partnership problems was important. Opportunities to accommodate family would help them return to GP job. Another key finding was the general desire for career variety.
10. (Murphy *et al.*, 2003)	Quantitative (Cross-sectional)	266 GPs	Ireland	To follow the career pathways of all graduates of Irish GP training between 1990-1996, their current positions, future plans, perceived barriers to ideal career and attitudes to out of hours work.	Retention	83% have remained in general practice. Out of hours commitment and availability of local posts were the most commonly perceived barriers to career progress. 26% were not prepared to do any out of hours work; this differed between males (10%) and females (30%). 17% have left general practice, and their most common reason was another career interest.
11. (Sibbald, Bojke and Gravelle, 2003)	Quantitative (cohort)	1949 GP principals (790 were surveyed in 1998 and 1159 in 2001)	England - UK	To measure GPs intentions to quit direct patient care, to assess changes between 1998 and 2000, and to investigate associated factors, notably job satisfaction.	Retention	Intentions to quit direct patient care in the next five years rose from 14% in 1998 to 22% in 2001. The main factors associated with quitting were older age and ethnic minority status. Higher job satisfaction and having children younger than 18 years were associated with a reduced likelihood of quitting. The rise in intentions to quit was due mainly to a reduction in job satisfaction

						and slight increase in the number of doctors from ethnic minorities and in the mean age of doctors.
12. (Chambers, Colthart and Mckinstry, 2004)	Quantitative (Cross-sectional)	348 GP principals aged 55 and older	Scotland - UK	To investigate intentions for retirement and assess interest in a retention scheme along the lines of the retainer scheme for GPs	Retention	Many GPs on the point of retirement would be interested in a retention scheme along the lines of the existing retainer scheme. 71% of the GPs at least plan to retire at or before the age of 60, with excessive workload being cited as the main reason and other interests as the second reason.
13. (Wordsworth *et al.*, 2004)	Other (Discrete choice experiment)	1292 GPs	UK	To elicit GP principals' and sessional GPs' preferences for alternative jobs in general practice, and to identify the most important work attributes	Recruitment and Retention	GPs preferred a job with longer consultations, low working hours, but with high earnings. A job with outside commitments was preferable; but not with additional out-of-hours. Sessional GPs placed a lower value on consultation length, were less worried about hours of work, and a job offering sufficient continuing professional development was less important.
14. (Buddeberg-fischer *et al.*, 2006)	Quantitative (3rd phase of prospective survey of a cohort of graduates)	515 residents	Switzerland	To ascertain how many third-year residents graduating in 2001/02 from medical schools in German-speaking Switzerland wanted to become GPs, their career goals, and how many switched to other specialties.	Recruitment and Retention	Primary care seems to hold little attraction as a career goal for young physicians. Residency experiences seem to have more of an effect on choice of specialty than teaching experiences during medical school.
15. (Hutchins *et al.*, 2006)	Qualitative (interviews)	15 GPs	UK	To evaluate the returner scheme in London, and to assess its effectiveness in returning qualified GPs to practice on completion of their training programme.	Retention	Main themes: 1- The importance of a supportive and protective environment for GP returners to refresh their skills and regain confidence 2- The value of one-to-one teaching. 3- The need for greater peer support, 4- The need for greater flexibility in accessing training opportunities outside the programme. 5- The need for greater distinction between GP returners and GP registrars. 6- More information about the scheme should be provided to practices and primary care trusts. The GP Returner Scheme is a cost-effective way of recruiting GPs. GP returners have different needs to GP registrars. The GP Returner Scheme provides a supportive and protected environment.
16. (Jenson, Hutchins and Rowlands, 2006)	Qualitative (focus groups)	1 focus group (9 GPs)	UK	To investigate the value of an educational support group in recruiting and retaining GPs	Recruitment and Retention	Modifiable factors influencing recruitment included type of post and contract as well as educational support. Modifiable factors influencing retention included a network of supportive colleagues, help keeping up to date and financial factors. The educational

						support group itself was the most significant factor influencing retention
17. (Lloyd and Leese, 2006)	Quantitative (cross-sectional)	207 GP trainees	England - UK	To examine the views of GP registrars about their future careers in Yorkshire, England	Retention	76% planned to take a specific job in primary care; 40% in general practice rather than primary care trust. 52% had different medical career prior to general practice and 55% didn't feel well prepared to find a suitable practice. 82% were interested in teaching and 83% in sub-specialisation. 57% said the job preference was affected by domestic commitments.
18. (Kelley *et al.*, 2008)	Quantitative (Cross-sectional)	201 physicians	Canada	The goal of this research was to understand factors that affect future practice intentions of physicians who practise in rural and underserviced areas	Retention	Over two-thirds of the physicians intended to remain in practice in 5 years, and most of these physicians were from the only city in Northwestern Ontario. Physicians were more likely to intend to stay in practice if they were younger, practised in Thunder Bay and scored higher on the family/community scale.
19. (Soler *et al.*, 2008)	Quantitative (Cross-sectional)	1393 family physicians	England, Malta, Sweden, Bulgaria, Croatia, Italy, France, Poland, Greece, Hungary, Spain, Turkey	To determine the prevalence of burnout, and of associated factors, amongst family doctors in European countries.	Retention	Burnout seems to be a common problem in family physicians across Europe and is associated with personal and workload indicators, and especially job satisfaction, intention to change job and the (ab)use of alcohol, tobacco and medication.
20. (Buddeberg-fischer, Klaghofer and Stamm, 2011)	Quantitative (cohort)	579 physicians (Part of an ongoing prospective survey of a cohort of medical graduates)	Switzerland	To investigate factors relating to the decision to take up a career in family medicine. Also, incentives and disincentives for starting a family practice as well as factors influencing the decision about practice location and practice model are addressed.	Recruitment	The reasons for choosing family medicine include continuity of physician-patient relationship, variety within the specialty, and short specialty training, taking into account sociodemographic factors. The low level of manageability is a deterrent factor for family medicine. Important factors for choosing family practice are personal experience and trusting relationships with family physicians throughout medical school and residency. The main obstacles are the high costs involved in taking on a practice and the limited availability of practice licenses.

21. (Hann, Reeves and Sibbald, 2011)	Quantitative - Secondary data analysis	1174 family physicians aged 50 years and under	England- UK	To explore the relationships between job satisfaction, intentions to leave and actually leaving among family physicians working in the NHS of England.	Retention	Of the 1174 family physicians, 16.5% had left direct patient care within 5 years. Although higher levels of job 'dissatisfaction' were associated with an increased likelihood of leaving, higher levels of job 'satisfaction' did not prevent leaving.
22. (Lorant *et al.*, 2011)	Other (stakeholders priorities assessment)	102 Key stakeholders	Belgium	To identify political priorities for improving GPs' attraction to the profession and their retention within it.	Recruitment and Retention	Practice organisation policies and training policies received the highest scores. Financing policies, governance, and work–life balance policies scored poorly. Stakeholders were keen on moving GPs towards teamwork, improving their role as care coordinator, and reduce administrative tasks. They stressed on early exposure of medical students to general practice. Overall, conservative policies were better scored than innovative ones
23. (Carek *et al.*, 2012)	Quantitative (Cross-sectional)	172 family medicine residency directors	U.S	Examine the opinions of family medicine residency directors regarding the effects of the changes in length of training on the primary care physician workforce in the US	Recruitment	Most directors feel that changing reimbursement for primary care physicians would have the greatest impact on the workforce.
24. (Heponiemi *et al.*, 2012)	Quantitative (cohort)	In Phase 1 2841 physicians, in phase 2 total number was 1705	Finland	To examine the effects of leaving public sector GP work and taking a public-sector GP position on changes in time pressure, patient-related stress, distress and work interference with family.	Recruitment and Retention	Leaving public sector GP work was associated with substantially decreased time pressure, patient-related stress, distress, and work interference with family. In contrast, taking a position as a public-sector GP was associated with an increase in these factors.
25. (Lambert *et al.*, 2012)	Quantitative (Cross-sectional)	20250 recently graduated physicians	UK	To report on the reasons why doctors choose or reject careers in general practice, comparing intending GPs with doctors who chose hospital careers.	Recruitment	Hours and working conditions were a strong influence for intending GPs. Relatively few doctors had actually considered general practice seriously but then rejected it, 78% of the doctors who rejected general practice gave "job content as their reason.
26. (Sumanen *et al.*, 2012)	Quantitative (Cross-sectional)	2,956 GPs	Finland	To establish the working places of specializing and specialized GPs, and where they assume they will work in the future	Retention	Many experienced GPs will leave their work as a health centre physician. Several GP trainees do not consider health centre physician's work as a long-term career option.

27. (Van Greuningen, Heiligers and der Velden, 2012)	Quantitative (Cross-sectional)	312 retired GPs (1998-2002), 219 GPs retired (2003-2007	Netherlands	Focuses on actual GP turnover and the determining factors for this in the Netherlands	Retention	The results of this study suggest that the decrease in the probability of GPs leaving general practice within one year and the increasing retirement age are caused by a decrease in the objective workload, a change in GPs' work perception, external factors and personal reasons.
28. (Heponiemi *et al.*, 2013)	Quantitative (cohort)	1581 Finnish physicians	Finland	To examine the effects of leaving public sector GP work and taking up a public-sector GP position on the changes of job satisfaction, job involvement and turnover intentions. Also, to examined whether organizational justice in the new position would moderate these associations	Retention	A change to work as a public GP was associated with a decrease in job satisfaction and job involvement when new GPs experienced that their primary care organization was unfair. High organizational justice was able to buffer against these negative effects. Those who changed to work as public GPs had 2.8 times and those who stayed as public GPs had 1.6 times higher likelihood of having turnover intentions compared to those who worked in other positions.
29. (Kuusio *et al.*, 2013)	Quantitative (Cross-sectional)	4333 physicians (832 GPs, of those 176 were foreign-born)	Finland	To explore the role of psychosocial factors in explaining intention to leave among GPs including potential differences between foreign-born and Finnish GPs	Retention	Intention to leave was more common among foreign-born GPs. High job demands were associated with higher intention to leave from primary care in both groups. But only remained among foreign-born GPs after adjusting for the country of origin or the reason for migration. Lack of job control, patient-related stress, and stresses related to teamwork were associated with higher intention to leave only Finnish among GPs.
30. (Lambert, Smith and Goldacre, 2013)	Quantitative (Cohort)	3082 GPs (surveys sent in 1, 3, 7, and 10 years after graduation)	UK	To compare job satisfaction of GPs who chose general practice early or later in their career	Recruitment and Retention	Job satisfaction levels were generally high among the early and late choosers. Late choosers after preferring another speciality, are likely to have a satisfying career
31. (Tandjung *et al.*, 2013)	Quantitative (Cross-sectional)	456 recently certified GPs	Switzerland	To report the working conditions of recently certified GPs and the effect of vocational training in general practice on GP skills and knowledge, and economic skills.	Recruitment and Retention	80.0% were currently working in general practice and 12.2% of the participants did not work in general practice. The majority of the participants working as GPs decided to become a GP during their residency. Overall, 60.6% completed vocational training in a general practice, which significantly improved self-perceived general practice skills compared with their colleagues without such training.
32. (Roos *et al.*, 2014)	Quantitative (Cross-sectional)	3722 (2533 GP trainees; 1189	Czech Republic, Denmark,	Explore motivation for career choice and job satisfaction of GP trainees	Recruitment and Retention	Most cited reasons for choosing GP: 'compatibility with family life', 'challenging medically broad discipline', 'individual approach to people' 'holistic approach' and 'autonomy and

		newly qualified GPs)	Germany, Italy, Norway, Portugal, UK	and newly qualified GPs across seven European countries		independence'. Overall job satisfaction was high two-thirds of those surveyed stating they would choose to be a physician and a GP again.
33. (Dale *et al.*, 2015)	Quantitative (Cross-sectional)	1,192 GPs	England - UK	To investigate underlying factors causing early retirement and intentions to reduce hours of working of GPs and how these might be mitigated.	Retention	82.0 % intend to leave, take a career break and/or reduce clinical hours of work within the next five years. Issues that most influenced intentions were volume and intensity of workload, time spent on "unimportant tasks", introduction of seven-day working and lack of job satisfaction. Main themes obtained from open questions were the cumulative impact of work-related pressures, the changing and growing nature of the workload, and the consequent stress.
34. (Dowell *et al.*, 2015)	Quantitative (Cross-sectional)	801 GPs	Scotland - UK	To investigate the association between GPs socio-economic and rural background at application to medical school and demographic characteristics of their current practice.	Recruitment	GPs whose parents had semi-routine or routine occupations had 4.3 times the odds of working in a deprived practice compared to those with parents from managerial and professional jobs. GPs from remote and rural backgrounds were more likely to work in remote practices, as were GPs originating from other UK countries.
35. (Elkhawaga, Bernard and El-Gilany, 2015)	Quantitative (Cross-sectional)	437 house officers	Egypt	To describe perceptions, expectations, level of information, and of choice of family medicine amongst Egyptian house after attending a one-day orientation about family medicine.	Recruitment	The most influential factors were experiences during the course of study and the opinion of family physicians. More than two fifths of participants recommended training in health centres and third recommended the increase of training in medical school, and nearly 50% suggested to be conducted during the fourth year of. 50.4% considered family medicine after orientation. Rural residence and low grades in public health are the independent predictors of choosing family medicine as a career.
36. (Zou *et al.*, 2015)	Quantitative (Cross-sectional)	163 GPs	China	Comparing the quality of primary care offered by GPs with non-GPs and exploring predictors of GPs' future work intentions	Retention	GPs reported higher quality of primary care than other physicians, and were more inclined to stay in their current job
37. (Alameddine *et al.*, 2016)	Qualitative (interviews)	22 interviews with primary health care experts	Lebanon	To explore and synthesize the opinions of primary health care and community stakeholders on the human resources for health recruitment and retention strategies and practices in Lebanon, as well as	Recruitment and Retention	5 themes emerged: understanding primary health care scope, human resources recruitment issues, human resources retention challenges, rural areas' specific challenges and stakeholders' recommendations. Analysis revealed a lack of a unified understanding of the primary health care scope impacting the human resources planning. Obstacles to recruitment included the

				the obstacles and challenges hindering their optimization and the means to overcome them.		suboptimal supply of human resources, financial constraints and poor management. Retention difficulties were to poor working environments, financial constraints and lack of professional development.
38. (Dale *et al.*, 2016)	Other (Secondary data analysis of qualitative comments in survey)	42 comments related to appraisal and revalidation	England- UK	To identify how the experience of appraisal and revalidation might be influencing intentions to leave general practice.	Retention	Key themes: A bureaucratic, inflexible exercise that added to an already pressured workload; an activity that has little educational value, relevance to professional development or quality of care; and an issue that contributes to low morale, work-related distress and intentions to leave general practice.
39. (Doran *et al.*, 2016)	Mixed (online survey + interviews)	143 survey responders + 21 interviewees	England - UK	To explore the reasons why GPs leave general practice early	Retention	Organisational changes increased administrative tasks and workload, which perceived by GPs to have changed doctor-patient relationship. Lack of time with patients have compromised the ability to practice patient-centred care, and GPs' sense of professional autonomy and values, resulting in diminished job satisfaction. The increased patient demand and negative media image left many GPs unsupported and vulnerable to burnout and ill health, and, to the decision to leave general practice
40. (Kinouani *et al.*, 2016)	Qualitative (Semi-structured interviews)	16 young GPs	France	To explore the determinants of choice between private or salaried practice among young general practitioners.	Retention	The main occupational factors were: working conditions, need of varied scope of practice, quality of the doctor-patient relationship or career flexibility. Postgraduate training, having worked as a locum or self-interest and work-life balance were also determining. The fee-for-service scheme or home visits may be discouraging for choosing private practice.
41. (Lambert, Smith and Goldacre, 2016)	Quantitative (Cross-sectional)	20,940 medical graduates	UK	To report on the views of GPs compared with clinicians in other specialties about their future career prospect	Retention	GPs held broadly positive views of their career prospect, as did other doctors. However, there was an increase in negativity with increasing time since graduation that was not seen in hospital doctors.
42. (Sansom *et al.*, 2016)	Qualitative (Semi-structured interviews)	23 GPs	UK	To investigate the reasons behind intentions to quit direct patient care among GPs aged 50 to 60 years.	Retention	Four main themes: 1- Early retirement is a viable option, 2- There are other options for GPs, 3- GPs feel they are doing an undoable job, 4- GPs may have other interests that pull them away from the field.

43. (Verma *et al.*, 2016)	Systematic Review	51 studies	Not relevant	To evaluate interventions and strategies used to recruit and retain primary care doctors internationally.	Recruitment and Retention	This review found evidence to support undergraduate and postgraduate placements in underserved areas, and selective recruitment of medical students. There was mixed evidence about financial incentives. A marketing campaign was associated with lower recruitment.
44. (Alameddine *et al.*, 2017)	Qualitative (Semi-structured interviews)	11 stakeholders	Qatar	Soliciting the feedback of primary health care stakeholders on the current human resources for health recruitment and retention strategies and the means to strengthening them to enhance HRH availability and tenure in the PHC sector.	Recruitment and Retention	Thematic analysis precipitated a number of themes. Under recruitment, the centrality of enhancing collaboration with academic institutions, enhancing extrinsic benefits, and strengthening human resources recruitment and management practices. Dedicated support needs to be provided to expatriate human resources for health especially in regard to housing services, children schooling, and streamlining administrative processes for relocation. Findings revealed that job security, continuous professional development, objective performance appraisal systems, enhanced job transparency, and remuneration are key retention concerns.
45. (Alberti *et al.*, 2017)	Mixed (Survey + Focus groups)	Survey = 780 foundation doctors, 6 Focus groups with 49 participants	UK	To ascertain what comments, both negative and positive, are being made in UK clinical settings to GP trainees about GP and to further explore these comments and their influence on career choice.	Recruitment	Positive comments were around choosing GP is a family- focused choice which facilities a good work–life balance. Workload, being 'just a GP', GP is boring, a waste of training and a second-class career choice was the most common negative comment. Thematic analysis identified key factors such as previous exposure to and experience of GP, family members who were GPs, GP role models, demographics of the clinician and referral behaviour. Trainees perceived that negative comments may be discouraging others from choosing GP as a career.
46. (Dale *et al.*, 2017)	Quantitative (cross-sectional)	178 GP trainees	England - UK	To investigate the immediate to medium term career intentions of those who are about to become GPs and the factors that are influencing career plans.	Retention	Most participants planned to work as salaried GPs or locums; others failed to express a career plan, planned to leave general practice completely, or work overseas. Many were interested in developing portfolio careers. The quality of general practice experience across different training stages were reported as influencing personal career plans, and especially perceptions about workload pressure and morale within the training. Experience of a poor work–life balance as a trainee had a negative effect on career intentions, as did negative perceptions about how general practice is portrayed by politicians and the media.

47. (Fletcher *et al.*, 2017)	Quantitative (cross-sectional)	2248 GPs	England - UK	To describe GPs' career intentions, especially those which might impact on GP workforce availability over the next 5 years.	Retention	37% reported a high likelihood of quitting direct patient care within the next 5 years. Overall, 70% respondents reported a career intention that would negatively impact GP workforce capacity over the next 5 years, through permanently leaving or reducing hours spent in direct patient care, or through taking a career break. GP age was an important predictor of career intentions; sharp increases in GPs intending to quit patient care were evident from 52 years. GPs with very low morale were likely to report intentions to quit patient care or to take a career break.
48. (Lambert, Smith and Goldacre, 2017)	Quantitative (cohort)	9161 of doctors 3 years after graduation	UK	To report on trends in young doctors' views on the attractiveness of general practice as a career, compared to hospital practice.	Recruitment	Over the 16 years covered by this study, the attractiveness of general practice has fallen compared to hospital practice. This may not reflect a decline in the attractiveness of general practice in absolute terms; rather, it may reflect the increase in attractiveness of hospital practice over time.
49. (Marchand and Peckham, 2017)	Systematic Review	138 articles	Not relevant	To identify evidence on different approaches to retention and recruitment of GPs, such as intrinsic versus extrinsic motivational determinants	Recruitment and Retention	Important factors to increase recruitment were early exposure to primary care, the fit between skills and attributes, and experience in primary care settings. Factors that influenced retention were subspecialisation and portfolio careers, and job satisfaction. The most important factors to recruitment and retention were intrinsic and idiosyncratic, such as recognition, rather than extrinsic, such as income.
50. (Merrett *et al.*, 2017)	Qualitative (Focus groups)	Five focus groups – 74 foundation year doctors	UK	To understand the attitudes of newly qualified doctors towards a career in general practice, to appreciate potential reasons for the crisis in GP recruitment, and to recommend ways to improve recruitment	Recruitment	Four themes emerged: good quality of life, job satisfaction, uncertainty around the future of general practice, and lack of respect toward GPs from both doctors and the public. Participants felt that general practice can provide work-life balance, fair pay, and job stability. Uncertainties around future training, skill level, payment, and workload, with the perceived stigma were viewed as deterrent to a career in general practice.
51. (Spooner *et al.*, 2017)	Mixed (Survey + Interviews)	816 surveys + 20 interviews from 2nd year foundation doctors	UK	To examine the extent, and nature, of impact on junior doctors' career decisions, of a proposed new contract and the uncertainty surrounding it	Recruitment and Retention	20% indicated that contract issues had prompted them to switch specialty and a further 20% had become uncertain about switching specialty. Switching specialty choice was more among those now choosing a community-based, rather than hospital-based specialty. 30% selecting general practice had switched choice because of the new contract. Interview data suggests that doctors felt they had become less valued or appreciated in the National Health Service and in society more broadly.

52. (Andersen, Pedersen and Waldorff, 2018)	Quantitative (Cross-sectional study	1,906 GPs	Denmark	To analyse the associations between GP retirement, job satisfaction and attitudes towards a mandatory accreditation scheme	Retention	Practice retirement was associated with job dissatisfaction (OR: 2.5). Retirement was not associated with any of the other surveyed attitudinal variables. Retirement rate was relatively high in the accreditation start-up period.
53. (Gan *et al.*, 2018)	Quantitative (Cross-sectional study)	1016 GPs	China	To assess the intention of GPs leaving their posts among a sample and investigating associated factors.	Retention	78.35% of the GPs had a moderate or higher level of turnover intention. Generalized linear regression analysis indicated that GPs who were male; who had a vocational school or higher; who had a temporary work contract; who were with lower level of job satisfaction; who reported higher scores on emotional exhaustion; who had been exposed to higher frequency of workplace violence were expressed higher intention to leave their present positions.
54. (Sansom *et al.*, 2018)	Qualitative study	41 GPs	UK	To identify factors influencing GPs' decisions about whether or not to remain in direct patient care in general practice and what might help to retain them in that role.	Retention	Reasons for leaving direct patient care were complex and based on a range of job-related and individual factors. Three key themes underpinned the interviewed GPs' thinking and rationale: issues relating to their personal and professional identity and the perceived value of general practice-based care within the healthcare system; concerns regarding fear and risk, for example, in respect of medical litigation and managing administrative challenges within the context of increasingly complex care pathways and environments; and issues around choice and volition in respect of personal social, financial, domestic and professional considerations.
55. (Studerus *et al.*, 2018)	Quantitative (Population-based cohort study)	381 GP trainees who chose an optional GP training module in GP practice	Switzerland	To determine how many Swiss GP trainees became practicing GPs after they completed optional training modules, and if longer modules were associated with higher rates of GP specialization.	Recruitment	Of 381 former GP trainees who participated in the program, (57%) were practicing GPs by 2016. When focusing on the trainees who had completed training between 2006 and 2010, the rate of practicing GPs was even 73%. Longer ($p = 0.018$) and part-time training modules ($p = 0.003$) were associated with higher rates of being a practicing GP. Most practicing GPs thought their optional GP training module was very important in their choice of specialty. GP trainees who spent more time training in a GP practice, or who trained part-time were more likely to become practicing GPs.
56. (Wen *et al.*, 2018)	Quantitative (Cross-sectional study)	440 Primary care doctors	China	To investigate primary care doctors' turnover intention and analyse associated factors involved in primary health facilities in Chongqing, China.	Retention	42.3% of the primary care doctors we sampled in Chongqing, China, intended to resign. Location, age, job title, doctor's position level, work pressure and job satisfaction were associated with turnover intention. Job satisfaction included both employment-related job satisfaction and satisfaction with the job itself.

						Improving job satisfaction, in terms of salary, promotion and job safety, is crucial for reducing turnover intention among primary care doctors.
57. (Chilvers *et al.*, 2019)	Delphi method - Panel consensus study	28 GP Partners and GPs working in national stakeholder organisations	UK	To identify policies and strategies that might be potentially appropriate at facilitating the retention of GPs in direct patient care in the UK.	Retention	Participants suggested providing GP practices 'at risk' of experiencing GP shortages with a toolkit for managing recruitment and retention, and interventions to facilitate peer support to enhance health and wellbeing, or support portfolio careers. Strategies to limit GP workload, and manage patient demand were also endorsed. The panel identified a number of practical ways to improve GP retention through interventions that might enhance job satisfaction and work-life balance.
58. (Cortez *et al.*, 2019)	Qualitative study	6 primary care doctors	Brazil	To understand the phenomenon that led Program to Value Primary Healthcare Professionals physicians to remain in Primary health care.	Retention	The physician's retention has a strong relationship with the acquisition of knowledge that is consistent with the context and the health needs of the population. Personal factors related to the empathetic profile with this level of care and the possibility of continuous improvement, besides the factors related to the adequate infrastructure and organizational climate with guaranteed salary in keeping with the complexity of Primary Care, positively influenced retention and were drivers of changes in healthcare and management in the health units they were related to. The bond created with the team and patients was a great satisfaction factor for the professional.
59. (Cunningham and Yeoman, 2019)	Qualitative study	14 GPs	UK	To identify the perceptions and experiences of recently qualified GPs who had trained in deprived areas	Retention	GPs were very positive about their training experiences. One concern was of the limited experience of patient-centred consulting which they felt weakened their performance in the Clinical Skills Assessment component of the MRCGP examination. Rotations between affluent and deprived areas would benefit General Practice Specialty Trainees particularly with the Clinical Skills Assessment examination. Training authorities should encourage and support practices in deprived areas to become training practices and encourage General Practice Specialty Trainees to train there.
60. (Lee and Cunningham, 2019)	Quantitative (Cross-sectional)	95 GP trainees taking up a General Practice Specialty Training	UK	To evaluate awareness and influence of the Targeted Enhanced Recruitment Scheme initiative on	Recruitment	Almost two-thirds (65.3%) were aware of Targeted Enhanced Recruitment Scheme at the time of application and this was via word of mouth and from the National Recruitment Office website. Only 21% of General Practice Specialty Training aware of

		post in August 2017		programme choice in Scotland in August 2017.		Targeted Enhanced Recruitment Scheme were influenced by it in their choice of training location. The locations of family, spouse or partner, and of pre-existing geographical preferences were more influential than Targeted Enhanced Recruitment Scheme.
61. (Lillevang *et al.*, 2019)	Mixed Methods design	670 Danish junior doctors participating in general practice specialist training in 2015	Denmark	To explore factors influencing Danish junior doctors' choice of general practice as their specialty.	Recruitment	Qualitative data: junior doctors found educational environments and a feasible work–life balance were important. They valued patient-centred healthcare, doctor–patient relationships based on continuity, and the possibility of organizing their work in smaller, manageable units. Quantitative data: 90.8% stated that the set-up of Danish specialist-training programme positively influenced their choice of general practice. Junior doctors (80.4%) found that their university curriculum had too little emphasis on general practice, 64.5% agreed that early basic postgraduate training in general practice had a high impact on their choice of general practice as their specialty.
62. (Napier and Clinch, 2019)	Qualitative study	12 GPs, aged 55–65	UK	To explore the impact upon morale and retirement decisions of changes in psychosocial aspects of UK general practice over the course of a career.	Retention	The combination of increasing demands with reduced autonomy puts practitioners under intense strain, diminishing the satisfaction they derive from their work and affecting retirement decisions. The Job Demands-Control-Support model is an empirically tested model that could be used to inform improved work design in general practice.
63. (Spooner, Laverty and Checkland, 2019)	Qualitative study	63 Doctors in their final year of GP training and within 5 years of completion of GP training	UK	To explores the training experiences and perceptions of newly qualified GPs to understand how their education, training, and early experiences of work influence their career plans.	Recruitment	15 interviews and 10 focus groups were carried out. Most doctors reported that training programmes had prepared them to deal confidently with most aspects of routine clinical GP work. However, they felt underprepared for the additional roles of running a practice and in their understanding of wider NHS organisational structures. Doctors wished to avoid unacceptably heavy workloads and voiced concerns about the longer-term sustainability of general practice. Strategies to attract and retain enough GPs to support delivery of comprehensive primary care should consider how doctors' early career experiences influence their career intentions.
64. (Owen *et al.*, 2019)	Quantitative (Cross-section study)	1697 GPs	UK	To investigate how recent national policy-led workforce interventions are affecting intentions to remain working as a GP.	Retention	59.4% reported that morale had reduced over the past two years, and 48.5% said they had brought forward their plans to leave general practice. Intention to leave/retire in the next 2 years increased from 13% in the 2014 to 18% in 2017, while intention

						to continue working for at least the next 5 years dropped from 63.9% to 48.5%. Age, length of service and lower job satisfaction were associated with intention to leave. Workload was the most common reasons given for intention to leave sooner than previously planned. GPs suggested increased funding, more GPs, better education of the public and expanding non-clinical and support staff as interventions to improve GP retention.
65. (Long *et al.*, 2020)	Systematic review	7 studies	Not applicable	To identify factors that affect GPs' decisions to leave direct patient care.	Retention	Many GPs report that job satisfaction directly relates to the quality of the doctor–patient relationship. Combined with changing relationships with patients and interfaces with secondary care, and the gradual sense of loss of autonomy within the workplace, many GPs report a reduction in job satisfaction. Once job satisfaction has become negatively impacted, the combined pressure of increased patient demand and workload, together with other stress factors, has left many feeling unsupported and vulnerable to burn-out and ill health, and ultimately to the decision to leave general practice.

6. Analysis of the results using the STF:

In this section, I report on the analysis using the STF components and themes as described in Table 12. The findings are reported according to the three systems: individual; social; and environmental-societal, paying particular attention to the way in which individual factors within each level influenced recruitment and retention. Some factors within systems were combined; some factors were not discussed in relation to the recruitment and retention literature e.g. sexual orientation and self-concept. Therefore, the utility of the STF is considered in the discussion.

Table 12 Systems Theory Framework Adaptation Details, Adapted from (Patton and McMahon, 2014)

Main themes	Components	Subthemes
Individual Factors	Gender and sexual orientation*	
	Values and beliefs*	
	Health, Ability and Disability*	
	Interests	
	Age	
	World of Knowledge and Skills*	
	Self-concept	
	Ethnicity	
	Personality	
	Physical attributes, attitudes*	
	Other factors	• Morale ** • Satisfaction ** • Leisure and self-time ** • Autonomy and involvement** • Burnout** • Respect, prestige, and recognition** • Career advancement and development**
Contextual Factors – Social Systems	Education institutes	• Medical education** • Postgraduate education** • Continuous professional development (CPD) ** • Returner scheme**
	Community groups	
	Media	
	Peers	
	Family	
	Friends**	
	Workplace	• Working hours** • Patient demands and relationships** • Communication with hospitals** • Structural Issues or Buildings** • Workload** • Contractual status** • Leave and Career breaks** • Rules and regulations** • Work environment**

		• Income, salaries, pensions
Contextual Factors – Environmental and Societal Systems	Political decisions	
	Employment market	
	Historical trends and Globalisation*	
	Geographical location	• Emigration • Deprived areas
	Socioeconomic status	

* Components merged by the researcher, ** Created by the researcher

6.1. Individual system:

6.1.1. Age:

There was little consideration of the impact of age on influencing decisions to become a primary care doctor. According to Lambert et al. (2001), age at entry to medical school was not related to career choice. In contrast, Buddeberg-fischer Klaghofer, and Stamm (2011) suggested that primary care was more popular among younger doctors. Age was, however, directly related to the intention to leave primary care (Dale et al. 2015; Fletcher et al. 2017).

Several studies reported that the intention to leave primary care increased with age (Sibbald, Bojke and Gravelle, 2003; Kelley *et al.*, 2008; Heponiemi *et al.*, 2013; Kuusio *et al.*, 2013; Owen *et al.*, 2019), with many GPs aged 55 years above are planning to retire before the age of 60 (Chambers, Colthart and Mckinstry, 2004). This was seen internationally. Hann, Reeves and Sibbald (2011), Leese et al. (2002), and Wen *et al.* (2018) found that younger GPs were also more likely to say they wanted to leave primary care. For example, 16% of Danish GPs retiring were below the age of 55 (Andersen, Pedersen and Waldorff, 2018). This reflected the findings of Dale et al. (2015) and Fletcher et al. (2017), who reported that younger GPs were more likely to take career breaks.

Older GPs mentioned several causes for leaving; for instance, Chambers, Colthart and Mckinstry (2004) reported the role of workload and Leese et al. (2002) mentioned partnership issues, or balancing other medical jobs or roles. Others mentioned having other caring responsibilities as a cause for leaving (Young, Leese and Sibbald, 2001). One study suggested another cause was the fear of being an old doctor (Sansom *et al.*, 2016). The differences between old and young GPs in how to manage the practice, made older GPs feel unsupported and less loyal to the NHS, and subsequently leading to quitting primary care (Long *et al.*, 2020).

There were also variations by gender. Among younger GPs, men reported leaving because of dissatisfaction with organisational changes (Leese *et al.*, 2002), while women left because of childcare responsibilities or moving to another area (Young, Leese and Sibbald, 2001; Leese *et al.*, 2002). Younger GPs also highlighted the importance of flexible hours and cited GP partnership problems for leaving primary care (Young, Leese and Sibbald, 2001). Among young female GP leavers, flexible daytime working, not working school holidays, and better childcare were strategies suggested to encourage their return (Leese *et al.*, 2002).

6.1.2. Gender:

Gender appeared to be an important factor in choosing primary care, with more females choosing primary care as a career (Lambert, Evans and Goldacre, 2002; Sumanen *et al.*, 2012; Alameddine *et al.*, 2016; Marchand and Peckham, 2017).

Women were reported to particularly value the working hours and conditions (Lambert *et al.*, 2012), although later the commitment required in primary care, especially among principals, had a negative impact on the likelihood of females adopting it as a career (Lloyd and Leese, 2006). Alameddine *et al.* (2017) also mentioned recruiting female doctors into primary care in Qatar among the challenges of recruitment. Several studies identified a gender difference among doctors leaving primary care, with men more likely to be planning to leave primary care than women (Dale *et al.*, 2015; Fletcher *et al.*, 2017; Gan *et al.*, 2018)

In contrast, other studies reported that female GPs were more likely to be thinking about or had quit primary care (Hann, Reeves and Sibbald, 2011; Van Greuningen, Heiligers and der Velden, 2012). Heponiemi *et al.* (2013) showed that gender was not an influencing factor in terms of quitting primary care. Fletcher et al. (2017) showed that, while women were more likely to report wanting to take a career break, in the adjusted logistic regression analysis, women were less likely to report intending to reduce hours spent in direct patient care.

Gender was also associated with other characteristics of GP leavers or causes of leaving. Female leavers were more likely to be younger, married, with children under the age of 18, have practised part-time, be non-principals, work in inner-city practices, and leave because of family responsibilities or moving to another area (Young, Leese and Sibbald, 2001; Leese *et al.*, 2002). This led Leese and colleagues to suggest that flexible daytime working, not working school holidays and better childcare might encourage female leavers to return, while no out-of-hours duties, less managerial responsibilities, and better pay were encouraging factors for men (Leese *et al.*, 2002). In the Netherlands, family reasons and wanting time for leisure were the most important

personal reasons for both male and female GPs to leave primary care (Van Greuningen, Heiligers and der Velden, 2012). Young women were more likely to leave to look after their families. Eleven percent of young women had done so (Leese *et al.*, 2002). However, both older males and females are more likely to combine general practice with a medical job in the NHS or private sector (Leese *et al.*, 2002).

6.1.3. Health:

A few studies considered health issues. Stress associated with practising primary care was identified in two studies as a reason for not selecting that career path or for regretting the choice (Blades *et al.*, 2000; Evans, Lambert and Goldcare, 2002).

Ill health was linked to leaving primary care, retirement, or taking a career break (Evans, Lambert and Goldcare, 2002; Doran *et al.*, 2016). However, Van Greuningen, Heiligers and der Velden (2012) showed that health was less important when retirement was due to older age. GPs also highlighted the fear and anxiety associated with their work and increased workload, which led to taking sick leave, in addition to the stigma and confidentiality concerns regarding seeking mental health support. (Sansom *et al.*, 2018).

Other studies identified a relationship between psychological stress and GPs' career intentions. According to Heponiemi et al. (2012), patient-related stress was associated with the intention of leaving or changing employment, and that stress decreased among former GPs. In a study that examined psychological stress on the intention to quit primary care, high job demands, high job control, patient-related stress and stresses related to teamwork were significantly related to the intention to leave (Kuusio *et al.*, 2013). Patient-related stress and stresses related to teamwork were associated with intention to leave differed between foreign-born and Finnish GPs (Kuusio *et al.*, 2013). Those results are supported by other studies, which showed that work-related psychological stress could increase the intention to quit among GPs, (Marchand and Peckham, 2017; Gan *et al.*, 2018), or reduce working hours (Owen *et al.*, 2019). In addition, there was evidence of an association between leaving primary care and having anxiety and depression caused by workload conditions (Doran *et al.*, 2016; Marchand and Peckham, 2017). Only one study cited that GPs prefer to stay in their jobs because it was less stressful than other fields of medicine (Cortez *et al.*, 2019). GPs' ill health was also linked to their job dissatisfaction, reduction in morale, and burnout, which can lead them to leave primary care (Long *et al.*, 2020)

6.1.4. Interests:

Several studies mentioned the relationship of choosing or rejecting primary care with doctors' interests (Lambert, Evans and Goldacre, 2002; Lloyd and Leese, 2006; Tandjung *et al.*, 2013; Elkhawaga, Bernard and El-Gilany, 2015).

Among the factors that increased doctors' interest in primary care were communication with patients (Roos *et al.*, 2014), the workplace setting (Friedberg and Glick, 2000), the variety of illnesses encountered (Buddeberg-fischer, Klaghofer and Stamm, 2011), the possibility of being a GP with a special interest (Marchand and Peckham, 2017; Merrett *et al.*, 2017) and the ability to combine primary care with other interests in life (Evans, Lambert and Goldcare, 2002).

There were, however, numerous causes reported for rejecting primary care as a career. For example, Friedberg and Glick (2000) mentioned interests in other more 'action-packed' specialities or environments, and the preference to work in a team as reasons to reject primary care. Other reasons included having little interest in the business side of general practice (Lloyd and Leese, 2006), it being seen as an easy and boring choice and the perception of being 'just a GP' (Alberti, Banner, *et al.*, 2017).

Evidence was found about the relationship between personal interests and leaving primary care. According to Chambers, Colthart and Mckinstry (2004), wishing to pursue other interests was a cause of early retirement among older Scottish GPs. This was also a reason for reducing working hours, having a career break, or leaving primary care early (Evans, Lambert and Goldcare, 2002). In the study done by Murphy et al. (2003), the most common reason for leaving general practice was another career interest.

6.1.5. Values and beliefs:

Among the values affecting the choice of primary care as a career were the doctor-patient relationship and continuity of care. In the study done by Elkhawaga, Bernard and El-Gilany (2015), most of the participants indicated that the close doctor-patient relationship is an attractive factor for choosing primary care. Other studies also highlighted the value of the continuity of care in the recruitment of doctors to primary care (Blades *et al.*, 2000; Friedberg and Glick, 2000; Buddeberg-fischer, Klaghofer and Stamm, 2011; Marchand and Peckham, 2017; Merrett *et al.*, 2017). Other values that helped in the recruitment of doctors to primary care were the 'holistic approach to the patient', (Roos *et al.*, 2014), and benefits to patients (Elkhawaga, Bernard and El-Gilany, 2015). The importance of primary care to the community (Elkhawaga, Bernard and El-Gilany,

2015; Marchand and Peckham, 2017) and the desire of the doctors to work in a job with a community role (Marchand and Peckham, 2017; S. Spooner *et al.*, 2017) also influenced the choice of primary care as a career.

Values also play a role in the retention of GPs. Communication with patients, the feeling of making a difference, and serving the community also enhanced GPs retention (Marchand and Peckham, 2017; Cortez *et al.*, 2019). Likewise, the reduction in the time spent with patients could affect GPs values and subsequently, their satisfaction (Long *et al.*, 2020). Both Dale et al. (2016) and Sansom *et al.* (2018), cited participants comments on the negative effects of appraisal and revalidation and constraints in their current practice on providing high-quality care. According to Evans, Lambert and Goldcare (2002), some respondents left general practice because of increased monitoring and reporting.

NHS organisational changes, the impact on patients and conflict between patient benefit and the availability of funds also made some GPs consider leaving (Evans, Lambert and Goldcare, 2002). Similarly, Merrett et al. (2017) and Doran et al. (2016) mentioned how focusing on meeting quotas and targets and administrative workload, respectively, affected patient care. Likewise, GP trainees and GPs expressed their concern about the impact of organisational changes and the new values on their career plans (Spooner, Laverty and Checkland, 2019). The lack of recognition of primary care values was also mentioned as a cause of leaving primary care (Owen *et al.*, 2019).

Several studies identified lifestyle or work-life balance as a key reason for choosing primary care (Friedberg and Glick, 2000; Evans, Lambert and Goldcare, 2002; Buddeberg-fischer *et al.*, 2006; Lambert *et al.*, 2012; Elkhawaga, Bernard and El-Gilany, 2015; Alberti *et al.*, 2017; Dale *et al.*, 2017; Lambert, Smith and Goldacre, 2017; Marchand and Peckham, 2017; Merrett *et al.*, 2017). In addition, Lambert et al. (2012) also found that doctors who rejected other medical careers because of work–life balance concerns were more likely to then choose primary care.

However, poor work-life balance contributed to a lack of retention of GPs. The participants in the study conducted by Merrett et al. (2017) mentioned the negative aspect of a primary care career in their life. Likewise, GPs who left also blamed the effect of primary care on their personal lives (Doran *et al.*, 2016), with around 50% of leavers citing work-life balance as a cause of leaving. Younger GPs who left primary care expressed their need for family-work balance, with primary care no longer seen as 'job for life' (Young, Leese and Sibbald, 2001). Dale et al. (2017) mentioned that approximately 50% of GP Registrars in their study were influenced

by the deterioration in the work-life balance in the final year of training, leading to intention to leave the field during the next five years. Spooner, Laverty and Checkland (2019), reported that GP trainees and GPs career decisions to stay were highly affected by their perception of how it will affect their professional and personal lives.

6.1.6. Knowledge and skills:

Four studies stressed the positive role of the medical breadth of primary care in choosing it as a speciality (Buddeberg-fischer *et al.*, 2006; Roos *et al.*, 2014; Marchand and Peckham, 2017; Lillevang *et al.*, 2019). In addition, both GPs and non-GPs mentioned the diagnostic challenge as an attractive feature of primary care (Friedberg and Glick, 2000). Acquiring different skills was also another cause of choosing primary care as a career (Evans, Lambert and Goldcare, 2002), as was the intellectually stimulating speciality or environment (Kinouani *et al.*, 2016).

Knowledge and skills were, however, also identified as factors in rejecting primary care. As mentioned by Buddeberg-fischer, Klaghofer, and Stamm (2011) the manageability of primary care as a speciality and increasing specialisation in medicine were negative factors in the perception of primary care. Clinical content, the perception of primary care as not clinically stimulating, and the attraction towards biomedical or technical specialities, decreased interest in primary care (Marchand and Peckham, 2017). According to Lambert et al. (2012), doctors who rejected a speciality for reasons related to job content were less likely to favour primary care. The wide breadth of knowledge required to practice primary care was seen as a disadvantage by some (Elkhawaga, Bernard and El-Gilany, 2015; Merrett *et al.*, 2017). Likewise, the workload caused by the varied scope of general practice played a role in pushing GPs away from choosing private rural practices (Kinouani *et al.*, 2016). In terms of retention, one study cited that the ability of GPs to continue to improve their knowledge can enhance their retention (Cortez *et al.*, 2019).

6.1.7. Ethnicity:

The relationship of ethnicity and the recruitment and retention of GPs was rarely addressed. Some GPs cited the difficulty in finding a post because of the discrimination against their ethnicity (Evans, Lambert and Goldcare, 2002).

6.1.8. Other personal factors:

Other personal factors mentioned were, morale; satisfaction; autonomy; burnout, prestige; sense of the belonging and recognition; leisure time and lifestyle; and career advancement.

According to Dale et al. (2017), high morale in the practice where training took place was associated with increasing GP trainees morale and had a positive influence on their career intentions. In contrast, GPs reporting 'very low' morale was more likely to intend to leave primary care, reduce clinical hours or to take a career break (Fletcher *et al.*, 2017). Various factors could reduce morale, including workload (Evans, Lambert and Goldcare, 2002), reduction in the perceived values of GPs' work, changes in the professional culture, and high patient expectations (Long *et al.*, 2020). There was also a clear relationship between physicians reported morale and the surrounding media and political atmosphere. Three studies cited the adverse effects of political decisions on GPs morale (Evans, Lambert and Goldcare, 2002; Dale *et al.*, 2015; Long *et al.*, 2020). Two highlighted the role of the negative media portrayals on GPs career intentions and retention (Dale *et al.*, 2017; Long *et al.*, 2020).

The relationship between physicians' satisfaction and leaving primary care was discussed in many of the studies. According to Marchand and Peckham (2017), job dissatisfaction was a significant predictor of GP retention and turnover. Several studies demonstrated a relationship between reduced job satisfaction and the intention to quit primary care (Evans, Lambert and Goldcare, 2002; Sibbald, Bojke and Gravelle, 2003; Dale *et al.*, 2015; Doran *et al.*, 2016; Sansom *et al.*, 2016, Wen *et al.*, 2018; Gan *et al.*, 2018; Owen *et al.*, 2019; Andersen, Pedersen and Waldorff, 2018; Long *et al.*, 2020). Conversely, Roos et al. (2014), showed that high job satisfaction was associated with not regretting the choice of becoming family physicians or GPs**.**

Leisure time seemed to be an important factor in choosing or rejecting primary care as a career. According to Buddeberg-fischer et al. (2006), Elkhawaga, Bernard and El-Gilany (2015), Friedberg and Glick (2000) and Lloyd and Leese (2006) time for leisure and lifestyle were important factors in choosing a career in primary care. In addition, newly qualified doctors perceived working as a GP would provide a good quality of life (Merrett *et al.*, 2017). Early retirement decisions among UK GPs were influenced by the desire for more leisure time (Sansom *et al.*, 2016). In the study done by Van Greuningen et al. (2012) in the Netherlands, family reasons and wanting time for leisure were the most important personal reasons for retirement in both genders.

Some of the studies highlighted the association between job autonomy and choosing or quitting primary care. According to Blades *et al.* (2000), clinical freedom and job control were among the attractive factors when considering which medical speciality to choose. In a study based in eight European countries, Roos et al. (2014) found that job autonomy was the reason for 30.4% of the sample to choose primary care, especially in Denmark,

the Czech Republic, and also amongst male respondents. Lillevang *et al.* (2019) showed the same results, and cited autonomy among the reasons for choosing primary care. Both GPs and non-GPs cited independence in decision making as an advantage of primary care. Several studies found that high job autonomy was inversely associated with the intention to leave primary care (Evans, Lambert and Goldcare, 2002; Kuusio *et al.*, 2013; Cortez *et al.*, 2019; Long *et al.*, 2020). This mirrored the finding of four other studies which showed that GP leavers or those who intended to retire felt they were losing autonomy and professional control or as a cause of dissatisfaction (Doran *et al.*, 2016; Sansom *et al.*, 2018; Wen *et al.*, 2018; Napier and Clinch, 2019).

Some of the studies reported a relationship between professional burnout and the intention to quit primary care. According to Soler et al. (2008), primary care doctors intending to quit or change their job had higher odds of having burnout; 38% of GPs who left primary care mentioned that they experienced burnout (Doran *et al.*, 2016). GPs retirement decisions were also influenced by their feeling of burnout (Napier and Clinch, 2019). Factors contributing to burnout included negative portrayals of GPs in the media and the government making GPs feel overwhelmed and stressed (Marchand and Peckham (2017). Fear of litigation also increased the possibility of burnout (Merrett *et al.*, 2017). Dale et al. (2017), however, suggested that portfolio careers can protect from professional burnout.

According to Alameddine et al. (2016), personal recognition could improve the retention of the staff working in primary care. Although not statistically significant, Kelley et al. (2008) showed that physicians were more likely to stay in their jobs if they were satisfied with their sense of belonging and appreciation within the community, a finding also reported by Kinouani et al. (2016). Heponiemi *et al.* (2012) argued that rewards given to GPs in several forms, including respect and support, could help balance the high effort needed by GPs and subsequently reduce their turnover intentions. Lack of professional recognition and feeling undervalued and mistrusted by the government and patients influenced GPs' career plans and quitting primary care (Marchand and Peckham, 2017; Long *et al.*, 2020). Furthermore, the choice of primary care as a career was affected by the perception of its low professional prestige (Buddeberg-fischer, Klaghofer and Stamm, 2011; Marchand and Peckham, 2017; Merrett *et al.*, 2017).

A final issue was career development and pathways. According to Hutchins et al. (2006), sessional GPs highlighted the positive role of career opportunities on recruitment. GP retention was influenced by a career pathway and portfolio (Marchand and Peckham, 2017). Young, Leese and Sibbald (2001) suggested a number of strategies to improve GP retention, including opportunities for career breaks with a guaranteed return, dual

careers, rotation with other health disciplines, and an expectation for lifetime learning in the wider sense factors influencing leaving primary care.

6.2. Social systems:

As described previously, the STF considers six areas under Social Systems: educational institutions, community groups, media, family, peers, workplace. While the STF addressed the role of educational institutions in relation to career choice, in relation to this literature, the focus was not on individual institutions but between undergraduate education and postgraduate/continuing professional development.

6.2.1. Education:

6.2.1.1. Undergraduate education:

Experiences during medical school had a clear role in shaping the decision to choose primary care, either encouraging or discouraging medical students into the profession (Buddeberg-fischer, Klaghofer and Stamm, 2011; Alberti *et al.*, 2017; Dale *et al.*, 2017; Merrett *et al.*, 2017). Elkhawaga and colleagues found that over half of the house officers they surveyed mentioned that their perception of primary care was shaped by their experiences during their studies (Elkhawaga, Bernard and El-Gilany, 2015).

Three studies highlighted the importance of the lack of exposure to primary care in the undergraduate curriculum in rejecting primary care as a career (Evans, Lambert and Goldcare, 2002; Alameddine *et al.*, 2016; Lambert, Smith and Goldacre, 2017). Friedberg and Glick (2000) reported that several of those in other specialities felt that during medical school, they had little exposure to primary care, poor clerkships, and lack of teaching significance. Lorant et al. (2011) highlighted the encouraging role of compulsory primary care posts in medical schools on career choice. Egyptian house officers recommended a specified course of primary care during medical school, including training in health centres (Elkhawaga, Bernard and El-Gilany, 2015). Attachments to general practice were suggested as an approach to enhance medical students interests in becoming GPs (Blades *et al.*, 2000)**.**

Marchand and Peckham (2017) suggested that reform of medical schools to emphasise primary care could enhance its choice as a career and suggested that the clinical content of primary care is often viewed by medical students' as less stimulating, thereby influencing their future speciality choice. Danish GP trainees also mentioned that medical schools did not emphasise primary care (Lillevang *et al.*, 2019).

However, other studies found that medical school experience had no role in the students' career choice in general or for primary care in particular. For instance, in the study done by Friedberg and Glick (2000), 43% of non-GPs mentioned that medical school did not influence their career decision. Buddeberg-fischer et al. (2006) also argued that exposure to primary care in medical school did not play a decisive role in choosing it as a career. Marchand and Peckham (2017) mentioned that even though the positive image of primary care during medical school could influence career decisions, such decisions were often formulated earlier in medical school before these more positive views are formed.

Lambert et al. (2001) found that graduate entrants were more likely to choose primary care than entrants who took intercalated degrees. The authors argued that interests developed during the intercalated years might influence intentions to pursue a career in specialist medicine. Another educational programme established by Basel University used one-to-one tutorials on private practice during medical school and showed no effect in increasing the numbers of primary care residents from the university (Buddeberg-fischer *et al.*, 2006).

6.2.1.2. Postgraduate education:

Both Buddeberg-fischer et al. (2006) and Tandjung et al. (2013) found that residency programmes have more impact on speciality choice than medical schools. The length of vocational training as a potential influence was also identified by several studies. The shorter duration of postgraduate training had a positive impact on choosing primary care as a career, for example, because of the ability to establish secure employment earlier (Evans, Lambert and Goldcare, 2002; Buddeberg-fischer *et al.*, 2006; Buddeberg-fischer, Klaghofer and Stamm, 2011; Lambert *et al.*, 2012; Merrett *et al.*, 2017). GP trainees who choose to be involved in the optional GP training programmes were more likely to continue practising as GPs (Studerus *et al.*, 2018). Others, however, viewed longer programmes as an opportunity to increase their knowledge and skills. In the study conducted by Carek et al. (2012), only a minority of participants felt that increasing the length of training to 4 years would reduce interest in primary care as a career.

Exposure to primary care during foundation year or training did not have a clear influence on the choice of primary care (Buddeberg-fischer, Klaghofer and Stamm, 2011; Alberti *et al.*, 2017; Dale *et al.*, 2017; Lillevang *et al.*, 2019). For some avoiding exams, or stress in hospital specialities were factors in encouraging them to consider primary care (Evans, Lambert and Goldcare, 2002). Blades *et al.* (2000) suggested encouraging undecided junior doctors to try the speciality without committing to complete it.

For some, the workload and work-life balance problems experienced in the last year of GP training negatively influenced their career intentions and increased the likelihood of leaving primary care within five years (Dale *et al.*, 2017). Gan *et al.* (2018) also showed that GPs in China who had a vocational qualification or higher were more likely to leave their jobs. A postgraduate voluntary bonding scheme with financial incentives established in New Zealand as an initiative to recruit trainees found that 89% of graduates had opted out of the scheme three years after entering it (Verma *et al.*, 2016). A similar programme was developed in Brazil in 2011, which participants thought could enhance GPs' retention as it had positive outcomes for the small number of participants involved (Cortez *et al.*, 2019).

CPD was among the factors influencing career choices or plans of GP trainees (Friedberg and Glick, 2000; Lloyd and Leese, 2006; Marchand and Peckham, 2017). Several studies reported that enhancing education, training, and professional development could have a positive impact on GP retention (Jenson, Hutchins and Rowlands, 2006; Dale *et al.*, 2015; Alameddine *et al.*, 2016; Marchand and Peckham, 2017).

Several studies discussed the value of the returner scheme. As mentioned by Young, Leese and Sibbald (2001), participants liked the positive changes in the returner scheme, especially the increased number of sessions per week, better income, the flexibility of workload, and the structured training. However, other GPs mentioned that the programme could be improved with more exposure to other specialities, increased provision, and more workshops and awaydays and some criticised the stress of exams, being treated like GP trainees, and low income (Hutchins *et al.*, 2006). Among the suggestions to improve the returner scheme were the extension of the programme, clearer protocols for feedback and assessments, and the reduction of the documentation process (Hutchins *et al.*, 2006).

6.2.2. Media:

Some studies discussed the relationship between the media and a primary care career choice. For instance, participants in the studies by Evans, Lambert and Goldcare (2002) and Alberti et al. (2017) mentioned the role of the negative impact of the media on choosing primary care as a career. Similarly, Egyptian house officers cited the impact of the media in forming their decisions about choosing primary care (Elkhawaga, Bernard and El-Gilany, 2015).

Establishing media campaigns to increase awareness and improve the public image of primary care were suggested (Alameddine *et al.*, 2016). The systematic review by Verma *et al.* (2016) showed mixed evidence about the effect of media campaigns on recruiting doctors to primary care. In terms of retention, GP trainees approaching the end of their vocational training mentioned the negative influence of the media in their career plans (Dale *et al.*, 2017). GPs leavers, (Doran *et al.*, 2016), and practising GPs, (Sansom *et al.*, 2018), also cited the role of negative media publicity as an influencer on their decision. According to Long *et al.* (2020), the negative media image of general practice adversely affected GPs' morale and satisfaction.

6.2.3. Family and Friends:

Several studies cited compatibility with family life as an important factor in choosing primary care as a career (Blades *et al.*, 2000; Evans, Lambert and Goldcare, 2002; Buddeberg-fischer *et al.*, 2006; Buddeberg-fischer, Klaghofer and Stamm, 2011; Lambert *et al.*, 2012; Roos *et al.*, 2014; Lambert, Smith and Goldacre, 2017; Marchand and Peckham, 2017). Not all studies shared this finding, Tandjung et al. (2013) reported that participants did not choose primary care as a career in Switzerland because of its incompatibility with family and professional life.

The opinion of the family was also a factor in choosing primary care. Participants in the studies by Elkhawaga, Bernard and El-Gilany (2015) and Alberti et al. (2017) cited the effect of their families or friends on choosing primary care as a career. Parents or family members as role models were also mentioned as influencing factors in choosing primary care (Roos *et al.*, 2014; Alberti *et al.*, 2017).

Family factors also played a role in the retention of GPs. For instance, family responsibilities were among the leading causes of leaving primary care (Young, Leese and Sibbald, 2001; Evans, Lambert and Goldcare, 2002; Murphy *et al.*, 2003; Hann, Reeves and Sibbald, 2011). Murphy et al. (2003), Leese *et al.* (2002) and Sibbald, Bojke and Gravelle (2003) suggested that having children increased the intention to leave primary care. Retirement decisions were also affected by family factors, with spending more time with family often cited as a reason for retirement (Van Greuningen, Heiligers and der Velden, 2012; Sansom *et al.*, 2016)

Several recommendations have been made that focus on the GPs' families and might improve their retention. For example, Kelley et al. (2008) mentioned that GPs were more likely to stay if they were more satisfied with their family life. In addition, GP leavers mentioned that the availability of better childcare might encourage their return, which could be an area for policymakers to work on (Leese et al., 2002).

According to Elkhawaga, Bernard and El-Gilany (2015), the opinion of friends could influence the decisions to choose or reject a career in primary care. The comments of friends about their future career were also vital for foundation doctors (Alberti *et al.*, 2017) and one study found that sessional GPs mentioned proximity to friends as a positive factor in selecting primary care (Jenson, Hutchins and Rowlands, 2006).

6.2.4. Peers, role models, and professional networks:

The influence of peers, role models and professional networks was discussed in some papers. According to Alberti et al. (2017), role models were an important influence on the perception of foundation doctors and GP trainees about primary care. Lambert et al. (2012) reported that student experiences with a positive GP role models could enhance their choice of primary care. GP trainees and GPs positively mentioned the role of GP trainers in comparison to hospital trainers in terms of their support (Spooner, Laverty and Checkland, 2019); and existence of a friendly relationship between colleagues (Lillevang *et al.*, 2019). In another study, 41% of non-GPs mentioned that the lack of primary care doctor role models had made them less likely to choose primary care (Friedberg and Glick, 2000).

Egyptian house officers discussed how their perception of primary care as a career was influenced by the opinion of primary care doctors about the speciality (Elkhawaga, Bernard and El-Gilany, 2015). Regarding GP retention, Kelley et al. (2008), mentioned that physicians were more willing to stay in their job if they were satisfied with the aspects related to their surrounding community. The same authors argued that retention policies should focus on providing cultural events, access for spouse's employment, education for children, and access to relatives and family. Dale *et al.* (2015), when examining the factors enhancing GPs' decision to quit the field, mentioned their need for more supportive networks, and participants in the study by Wen *et al.* (2018) cited peer support among the satisfaction factors.

Consultants and primary care doctors encountered by trainees during training were significant in formulating career choices (Blades *et al.*, 2000; Lorant *et al.*, 2011; Elkhawaga, Bernard and El-Gilany, 2015). Medical graduates described the perception of GPs as being second-class compared to hospital doctors as a barrier to choosing primary care (Evans, Lambert and Goldcare, 2002). The criticism of GPs' referral behaviour by other medical professionals during training was also mentioned as a deterring factor from choosing primary care (Alberti *et al.*, 2017).

Working alone or as a part of a team was also important (Blades *et al.* (2000). Medical graduates cited that their preference for a career with teamwork drove them away from choosing primary care (Friedberg and Glick, 2000), perceiving primary care as lacking support and the 'team spirit' that hospitals offer (Merrett *et al.*, 2017). Likewise, hospital clinicians perceived primary care as a lonely job, working without a team (Alberti *et al.*, 2017). Lorant et al. (2011) thus recommended encouraging group practices and reinforcing the GP's role in the multidisciplinary team as ways to make primary care more attractive.

GP partnership problems were mentioned as an important factor in deciding to leave primary care (Young, Leese and Sibbald, 2001; Leese *et al.*, 2002; Sansom *et al.*, 2016). Both Doran et al. (2016) and Kuusio et al. (2013) mentioned the role of conflicts within practices and stresses related to teamwork, respectively, as facilitators for GPs intentions to quit primary care. The culture of early retirement among GPs was influenced by peer GPs in the field (Sibbald, Bojke and Gravelle, 2003; Sansom *et al.*, 2016; S. Spooner *et al.*, 2017; Long *et al.*, 2020). Good working relationships and the availability of practice managers and other support staff could increase GPs retention (Sibbald, Bojke and Gravelle, 2003; Sansom *et al.*, 2016; S. Spooner *et al.*, 2017). In addition, the availability of a supportive network of colleagues and staff, and educational initiatives led by peers enhanced GPs retention (Jenson, Hutchins and Rowlands, 2006). According to Long *et al.* (2020), the lack of relationships within the practice, feeling unsupported by colleagues, bullying, and the existence of 'blame culture' increased GP dissatisfaction and, therefore, decisions to leave.

Encouraging group practices and reinforcing the GP's role in the multidisciplinary team were suggested to enhance GPs' retention (Lorant *et al.*, 2011). Likewise, Alameddine et al. (2016) mentioned that the retention of primary care health workers, including GPs, could be improved by adopting a flat hierarchy system that fostered partnership and team spirit.

The relationship between the returner scheme and peer factors were also discussed, with the authors suggesting a need to increase peer support by establishing regular forums through which returnees can meet informally with other returners and GP registrar trainees.

6.2.5. Workplace:

The workplace was a major issue across all of the identified papers. There were a number of identifiable subthemes, as shown in Table 12.

6.2.5.1. Workload:

Workload was an important factor in choosing or rejecting primary care as a career. While participants in the study by Evans, Lambert and Goldcare (2002) mentioned they had chosen primary care due to the perception of less workload compared to other specialities, others found workload a barrier to choosing primary care as a career (Friedberg and Glick, 2000; Alberti *et al.*, 2017; Merrett *et al.*, 2017).

Numerous studies reported increased workload as a key factor influencing GPs' decisions to leave primary care (Young, Leese and Sibbald, 2001; Evans, Lambert and Goldcare, 2002; Leese *et al.*, 2002; Hann, Reeves and Sibbald, 2011; Kuusio *et al.*, 2013; Dale *et al.*, 2015; Doran *et al.*, 2016; Marchand and Peckham, 2017; Wen *et al.*, 2018; Napier and Clinch, 2019; Alameddine *et al.*, 2017; Owen *et al.*, 2019; Long *et al.*, 2020). Chambers, Colthart and Mckinstry (2004) and Van Greuningen, Heiligers and der Velden (2012) suggested that workload played a role in influencing the retirement decision of GPs in Scotland and the Netherlands, respectively. Workload was also raised as a cause of GPs and trainees poor morale and satisfaction (Spooner, Laverty and Checkland, 2019; Long *et al.*, 2020), with GPs concerns about the safety and quality of care provided (Sansom *et al.*, 2018).

The administrative workload was also a barrier to both choosing primary care as a career and staying there (Blades *et al.*, 2000; Merrett *et al.*, 2017). Several studies found that the administrative workload played a role in their decision to leave primary care (Sibbald and Young, 2001; Leese *et al.*, 2002; Doran *et al.*, 2016; Napier and Clinch, 2019; Owen *et al.*, 2019; Long *et al.*, 2020). Increased time spent on unimportant tasks by GPs also enhanced their decision to quit (Dale *et al.*, 2015; Owen *et al.*, 2019)

Some of the increased workload was attributed to political decisions, including organisational change and increased monitoring – these issues will be discussed further in Section 6.3.1.

6.2.5.2. Working hours:

Fewer out-of-hours commitments, a reduction in total working hours, and more flexible working hours were identified as important (Young, Leese and Sibbald, 2001; Leese *et al.*, 2002; Wordsworth *et al.*, 2004).

Several studies identified that working hours influenced the decision to choose or reject a career in primary care (Blades *et al.*, 2000; Friedberg and Glick, 2000; Evans, Lambert and Goldcare, 2002; Lloyd and Leese, 2006; Buddeberg-fischer, Klaghofer and Stamm, 2011; Lambert *et al.*, 2012; Elkhawaga, Bernard and El-

Gilany, 2015; Lambert, Smith and Goldacre, 2017; Spooner *et al.*, 2017). Participants in the studies by Elkhawaga, Bernard and El-Gilany (2015), Blades *et al.* (2000), and Friedberg and Glick (2000) mentioned that they would choose a career in primary care because of perceived flexible working hours. Flexible working hours appeared important to those trainees already thinking about primary care as a career (Lambert *et al.*, 2012). Other studies found that trainees were considering a career in primary care because of the availability of part-time working options (Evans, Lambert and Goldcare, 2002; Lloyd and Leese, 2006; Buddeberg-fischer, Klaghofer and Stamm, 2011).

For others, however, working hours were mentioned among the reasons to leave primary care. For example, out-of-hours work was one of the main reasons for leaving primary care (Young, Leese and Sibbald, 2001; Evans, Lambert and Goldcare, 2002; Murphy *et al.*, 2003). Dale *et al.* (2015) and Owen *et al.* (2019) reported that the UK Government's proposal of seven-day access to primary care was a factor influencing the decision of GPs to leave. Inflexible working hours was another reason for leaving primary care (Young, Leese and Sibbald, 2001; Leese *et al.*, 2002). Offering flexible working hours schedules or no out-of-hour commitments were therefore mentioned to be approaches which would encourage people to stay (Leese *et al.*, 2002; Dale *et al.*, 2015; Alameddine *et al.*, 2016). Working more than 40 hours per week was also cited as an influencing factor for taking a career break (Dale *et al.*, 2015). Likewise, GPs mentioned their intentions to reduce working hours to achieve a better work-life balance (Dale *et al.*, 2017; Fletcher *et al.*, 2017). According to Owen *et al.* (2019), GPs reducing their working hours, were more likely to have the intention to leave in two years.

6.2.5.3. Work environment:

The working environment and conditions seemed to play a central role in choosing or rejecting a career. For instance, participants in the study by Blades et al. (2000) mentioned their regrets about choosing a career in medicine because of working conditions. Egyptian house officers said they would choose a career with good working conditions; 22.3% of the sample thought that primary care had a pleasant working environment (Elkhawaga, Bernard and El-Gilany, 2015). Several studies showed that work climate or condition played a role in recruiting doctors into primary care (Friedberg and Glick, 2000; Lambert, Smith and Goldacre, 2017; Marchand and Peckham, 2017).

The work environment or conditions also had a role in the retention of GPs. Three studies cited the influence of negative work environment or conditions on GPs' decision to quit primary care (Lloyd and Leese, 2006; Alameddine *et al.*, 2016; Doran *et al.*, 2016). Likewise, Zou et al. (2015) argued that Chinese GPs intended to

stay in their jobs because of the recent improvements in the working environment made by the Chinese government. Similarly, Dale et al. (2015) mentioned that improving the working environment was among the key elements in reversing GPs intent to quit the field. Alameddine et al. (2016), Heponiemi et al. (2012), and Lorant et al. (2011) all suggested that policies should target improving the working environment and conditions in order to improve retention.

6.2.5.4. Patient demands and relationships:

The doctor-patient relationship was a major influence in the decision to choose primary care (Friedberg and Glick, 2000; Lillevang *et al.*, 2019). Buddeberg-fischer, Klaghofer, and Stamm (2011) found that continuity of care through doctor-patient relationships was one of the factors positively associated with choosing a career in primary care. In a study that involved GPs from different European countries, Italian GPs mentioned that communication with patients was one of the main reasons they chose primary care (Roos *et al.*, 2014).

Patient relationships and demands can, however, also be a reason for leaving primary care or creating a stressful working environment. For example, the intention to leave primary care was significantly associated with patient-related stress among other psychological stressors (Kuusio *et al.*, 2013). Patients' demands were a major retirement influencer among Dutch GPs (Van Greuningen, Heiligers and der Velden, 2012). In addition, the participants in the study by Sansom et al. (2016), who were either retired GPs or intending to quit the field within five years, cited high and unrealistic expectations by patients among the causes of leaving. Likewise, high patient expectations and demands were mentioned among the reasons for leaving primary care in other studies (Young, Leese and Sibbald, 2001; Leese *et al.*, 2002; Dale *et al.*, 2015; Napier and Clinch, 2019). According to Long *et al.* (2020), the change in the doctor-patient relationship, high expectations, and increased demands led to GPs dissatisfaction. Sansom *et al.* (2018) also cited the effect of high patients' expectations, complaints, and demands by lowering GPs morale and forcing them to practice defensive medicine.

6.2.5.5. Contractual status:

Taking a job in primary care was often related to the future intention of becoming a principal. Furthermore, those choosing primary care early in their career were more likely to become principals than later entrants to the profession (Lambert, Smith and Goldacre, 2013). GP trainees future career plans were affected by the perception of hard work and personal commitment needed as a GP principal (Lloyd and Leese, 2006). The type of post and the stability it provides were also seen as essential factors in GPs recruitment (Jenson, Hutchins and Rowlands, 2006).

However, contractual status could also affect their retention. As mentioned by Fletcher et al. (2017), locum GPs were more likely to reduce clinical hours, take a career break, or leave direct patient care, while salaried GPs were least likely to leave. Also, Gan *et al.* (2018) showed that Chinese GPs who are working on a temporary contract are more likely to leave their jobs. GP principals had more intentions to leave because of the workload and commitment (Dale *et al.*, 2015). Medical graduates also discussed if reducing working hours might hinder their chances of obtaining principalship (Evans, Lambert and Goldcare, 2002). However, one study mentioned that doctors with higher ranks are more likely to leave primary care (Wen *et al.*, 2018).

Gender also played a role here, with female GPs more likely to apply for a salaried role, while males were more likely to plan for partnership (Dale *et al.*, 2017). Age was also important, with GPs aged 35–44 more likely to aim for partnership, while those who were younger considering a salaried post (Dale *et al.*, 2017).

6.2.5.6. Remuneration and financial incentives:

The perception that primary care was well paid influenced the decisions to join it (Evans, Lambert and Goldcare, 2002; Roos *et al.*, 2014; Elkhawaga, Bernard and El-Gilany, 2015; Merrett *et al.*, 2017). This view was held by both GPs and other speciality doctors (Friedberg and Glick, 2000).

However, some studies suggested that rejection of primary care as a career choice was also attributable to the salaries and financial incentives. Several studies mentioned the importance of increasing GPs' payments/reimbursements or introducing financial incentives to enhance their recruitment (Kelley *et al.*, 2008; Carek *et al.*, 2012; Alameddine *et al.*, 2016; Merrett *et al.*, 2017). Merrett *et al.* (2017), reported that some foundation doctors rejected primary care as a career choice because of the uncertainties regarding the increase in GPs' payment and UK government cost-cutting on GP salaries. In addition, both by Buddeberg-fischer, Klaghofer and Stamm (2011) and Evans, Lambert and Goldcare (2002) showed that low remuneration was a cause of rejecting primary care career choice.

The impact of salary on retention was mixed. For example, several studies mentioned the positive effect of improving remuneration and wages on increasing the retention of primary care physicians versus the negative effect of poor wages on retention (Murphy *et al.*, 2003; Jenson, Hutchins and Rowlands, 2006; Dale *et al.*, 2015; Zou *et al.*, 2015; Alameddine *et al.*, 2016; Sansom *et al.*, 2016; Marchand and Peckham, 2017). Among the reasons to leave primary care was the financial reason and 'future financial prospects' were more important

to GPs than hospital doctors, and the rate of payment (Evans, Lambert and Goldcare, 2002; Wen *et al.*, 2018). Male GP leavers who did not intend to return to primary care also mentioned that better payment might encourage them to return to the field (Leese et al., 2002). Moreover, some GPs mentioned that early retirement was financially a viable option (Sansom *et al.*, 2016).

Other studies, however, reported that changes in wages did not influence the retention of primary care physicians. For example, in the study done by Young, Leese and Sibbald (2001) only a few GPs left because of pay and few of those not planning to return mentioned that improving their payment might change their mind. Elsewhere, a primary care doctors' retention crisis in Canada continued despite the financial incentive strategy used to try to alleviate it (Kelley *et al.*, 2008). Although it could improve job satisfaction, remuneration had no direct effect on the intentions to leave primary care (Hann, Reeves and Sibbald, 2011). Thus, the evidence suggests that increases in income would not compensate for other sources of job dissatisfaction, such as workload (Marchand and Peckham, 2017).

The systematic review by Verma *et al.* (2016) cited a comparative study that examined the effectiveness of different types financial incentives on retention rate, and no difference was found. Likewise, Marchand and Peckham (2017) found there was little evidence to support the use of remuneration and retention schemes to enhance retention. Moreover, Lorant *et al.*, (2011), who explored stakeholders opinions about recruiting and retaining GPs, showed that financing was not among the top six recommendations because of its lack of acceptability to other health professionals and cost to society. Sibbald, Bojke and Gravelle (2003) mentioned that GPs in good financial positions may and can act on their wish of leaving primary care, while those with children and financial demands cannot do so which can be an explanation why they are less likely to leave.

One area that important was pensions. Some older GPs in England justified their retirement intentions because they had reached the level of full pension and would, therefore have an adequate income (Sansom *et al.*, 2016). Dale *et al.* (2015), suggested that changes to pension taxes were an important factor influencing the decision to leave primary care. Similarly, Long *et al.* (2020) mentioned that financial incentives that were meant to be enhance GPs' retention might have a reverse effect and encourage them to retire earlier, especially those related to pension schemes.

Finally, the financial implications of opening a practice was a barrier. According to Tandjung *et al.* (2013), both the high investment to establish a practice and the increasing economic challenges of general practice reduced intentions to work as a. Although, financial factors were less often rated as important in establishing a practice, among the principal obstacles were the high costs of taking over a practice, with some of the GPs concerned over the financial risks associated with the partnership (Young, Leese and Sibbald, 2001).

6.2.5.7. Other workplace factors:

Among the other factors that affected GPs retention and which were related to their workplace were inadequate infrastructure, and the inability of the management to motivate the working staff and deal with the challenge that jeopardizes GPs retention (Cortez *et al.*, 2019). Gan *et al.* (2018) also mentioned that lack of safety in primary care facilities hinders the retention of GPs in China. Other work-related factors that were negatively linked to GPs retention included the high expectations from primary care field, tensions with secondary care providers in terms of managing patients, fear of litigation, and the introduction of targets and guidelines (Sansom *et al.*, 2018). Owen *et al.* (2019) mentioned that doctors who served 20-29 years have a higher likelihood of leaving. The same authors also highlighted the adverse role of the fear of litigation and the medical indemnity payment on GPs retention.

6.3. Environmental - societal systems:

This system originally addressed six areas: Political decisions; Historical trends; Globalisation; Socioeconomic status; Employment market; Geographical location. Analysis of the data found that not all were applicable to primary care doctor recruitment and retention. This will be discussed further in the discussion section.

6.3.1. Political decisions:

Several studies mentioned the relationship between political decisions and choosing primary care as a career. For instance, several studies mentioned that among the hurdles of choosing a career in primary care in the UK was the uncertain future of the field and the whole of the NHS (Evans, Lambert and Goldcare, 2002; Alberti *et al.*, 2017; Merrett *et al.*, 2017; S. Spooner *et al.*, 2017). Spooner et al. (2017) highlighted the uncertainties around the new contract for trainee doctors in the UK in 2015 and Merrett et al. (2017) on the uncertainties around the government cost-cutting on GP salaries and the perceived privatisation of the NHS. Such issues were raised in other countries too. For example, the restrictions on obtaining a new practice license were among the reasons not to choose primary care as a career in Switzerland (Buddeberg-fischer, Klaghofer and Stamm, 2011). Stakeholders in the study by Alameddine *et al.* (2017) cited the lack of a recruitment strategy, inadequate

recruitment skills, poor job description, ineffective outsourcing of recruitment services, and bureaucratic issues among the challenges facing primary care recruitment in Qatar.

GP retention was also affected by political decisions. For example, GPs in the UK cited primary care reforms and changes as the cause of leaving or intending to leave primary care (Young, Leese and Sibbald, 2001; Evans, Lambert and Goldcare, 2002; Leese *et al.*, 2002; Hann, Reeves and Sibbald, 2011; Doran *et al.*, 2016; Napier and Clinch, 2019; Spooner, Laverty and Checkland, 2019; Sansom *et al.*, 2018; Long *et al.*, 2020). Such changes and reforms also raised concerns among older GPs about their investments in their practices and their financial future (Sansom *et al.*, 2018). Participants in the study by Owen *et al.* (2019) stressed the lack of funding for the services as encouraging them to leave. Danish GPs' retirement rates also increased after implementing organisational changes in the form of accreditation programs (Andersen, Pedersen and Waldorff, 2018). Long *et al.* (2020) cited GPs' feeling of being mistrusted by the government and uncertainty over the future of general practice as factors affecting GPs' retention.

In addition, Dale et al. (2017) stated that the five-year career plans for more than half of GP trainees in their sample were affected by the negative political commentary about primary care. Government demands contributed to the decision to retire among Dutch GPs (Van Greuningen, Heiligers and der Velden, 2012). Some Swiss GPs mentioned federal law restrictions on the opening of private practices as their reason for leaving primary care (Tandjung *et al.*, 2013). Also, Cortez *et al.* (2019) highlighted the fear of GPs in Brazil involved in a recruitment programme that they might be replaced by other doctors.

In contrast, Zou et al. (2015) showed the importance of political decisions to retain GPs by describing the role of the Chinese government in retaining GPs by investing their education, training and career development and improving their wages and workplace environment in recent years.

6.3.1.1. GP contracts:

In the UK, the political decision to change the NHS doctors' contract had several consequences. Spooner et al. (2017) examined the effects of the new NHS contract in 2015 on trainees and found that the reforms resulted in junior doctors questioning their career in medicine, intending to defer their decision of choosing a postgraduate speciality, planning to emigrate for further training, changing their career choices, changing their perceptions about primary care, and having difficulties in changing between training programs.

Political decisions also had a significant influence on increasing GPs' workload. For example, GPs mentioned that political decisions had changed their professional roles through organizational changes and introducing the Quality and Outcomes Framework in 2004 (Doran *et al.*, 2016). Likewise, the 1990 NHS reforms changed the nature of primary care and professional roles of GPs, especially the increase in the administrative work (Evans, Lambert and Goldcare, 2002). On the other hand, the same authors mentioned that the establishment of out-of-hours GP – Cooperatives mitigated some the effects of the political changes in some areas of work. According to Lorant et al. (2011), some of the policies that can enhance the recruitment or retention of GPs, such as increasing salaries and improving work-life balance, were not favoured by stakeholders because of its acceptability to other health professionals and its negative impact on the society in terms of the cost and accessibility to health services.

6.3.2. Geographical location:

One reason that GPs reduced working-hours, took a career break, or left their work was the need to change geographical location, including emigration to other countries (Evans, Lambert and Goldcare, 2002). Some GP trainees mentioned their intention to quit primary care and emigrate because of the negative impact of their career on their work-life balance (Dale *et al.*, 2017). Such arguments are supported by Marchand and Peckham (2017) who showed that the numbers of UK GPs working abroad were increasing. Despite their small number and low statistical power, another reason that might explain the emigration of GPs was the higher satisfaction with leisure time abroad in comparison with NHS GPs (Lambert, Evans and Goldacre, 2002). In the same context, Kuusio et al., (2013) compared the intention to leave primary care between foreign-born and Finnish GPs in Finland working in the public sector and found that more foreign-born GPs intended to quit because of different work-related stressors.

Another issue related to the geographical location was working in areas of socioeconomic deprivation. According to Williams *et al.*, (2001), urban deprived areas were less attractive for many GPs as they did not offer high income; Williams suggested offering more attractive benefits such as fewer working hours, less managerial responsibilities, and more out-of-hours work to attract doctors in. GPs also mentioned that there was more workload in deprived areas practices; however, others cited their preference for working in practices in deprived areas (Young, Leese and Sibbald, 2001). The same authors reported that minority ethnic, female, and older GPs were overrepresented in urban deprived areas, which have the greatest workforce problems. More recently, Verma *et al.* (2016) suggested that educational exposure to underserved areas may enhance retention in such areas. A scheme implemented in Scotland to enhance the recruitment in specific areas and

evaluated by Lee and Cunningham (2019) showed that 21% of general practice trainees were influenced by the program in determining their practice location.

The availability of GP slots in desired locations can enhance GPs' recruitment. For example, Lloyd and Leese (2006) mentioned that undergraduate education seemed to influence the students' postgraduate education location preferences. Both sessional GPs and recently graduated doctors mentioned that among the positive recruitment factors is the availability and proximity of posts to their family and friends and geographical stability (Evans, Lambert and Goldcare, 2002; Jenson, Hutchins and Rowlands, 2006).

In terms of retention, many of the included studies found that among the causes of leaving primary care was the non-availability of job vacancies in a specific location or moving to another area. According to Murphy *et al.* (2003), the non-availability of local posts was among the common reasons for leaving primary care in Ireland. Most of the older Scottish GPs who are interested in the returner scheme would prefer to be retained in their current practice (Chambers, Colthart and Mckinstry, 2004).

Moving to other areas or emigration were common reasons for quitting primary care, especially among married women to accommodate their partners' job relocation (Young, Leese and Sibbald, 2001; Evans, Lambert and Goldcare, 2002; Leese *et al.*, 2002). Wen *et al.* (2018) also cited that working in new urban areas is associated with the intention of leaving primary care.

6.3.3. Employment market:

Since some of the factors related to employment market were described in other sections, only those not mentioned previously and related to the employment market will be discussed here.

According to Tandjung et al. (2013), among Swiss GPs who completed their training, 20.0% were not working as GPs, of which 11.8% never had the intention to work as a GP but obtained the title for different reasons (e.g. to work as a company medical officer or in the pharmaceutical industry), and 12.2% stated they had no further intention to work as a GP although they had earlier intended to do so. In the UK, female GP leavers were more likely to work in medical jobs outside the NHS (Leese *et al.*, 2002). About a third of the Midlands GP registrars approaching the end of their vocational training mentioned their intention of working outside NHS general practice (Dale *et al.*, 2017). GPs also mentioned the other options a GP can have out of their clinical career such as being an appraiser, clinical commission lead, advisory committee member, pharmaceutical consultant

or in medical school (Sansom *et al.*, 2016). Murphy et al. (2003) showed that 28% of Irish GP training program graduates between 1990-1996 had left for other specialities, mainly general hospital medicine and psychiatry. Likewise, Heponiemi et al. (2013) found that the destinations of public GPs who left primary care were municipal hospitals, university hospitals, and private primary care services.

Although participants in the studies by Evans, Lambert and Goldcare (2002), Lambert *et al.* (2012), and Lambert, Smith and Goldacre (2017) mentioned that they chose primary care because of the non-availability of, or competition for, positions in other specialities or the availability of posts in primary care, respectively, participants in the study conducted by Murphy *et al.* (2003) said that among the reasons they left primary care was the non-availability of local posts. Sessional GPs in the study conducted by Jenson, Hutchins and Rowlands (2006) also mentioned that among the positive recruitment factors was the availability of suitable GP posts. Stakeholders interviewed by Alameddine et al. (2016) mentioned that the existence of more attractive job opportunities in other sectors made the retention of primary health care staff, including GPs, more difficult in Lebanon. Evans, Lambert, and Goldcare (2002) and Young, Leese, and Sibbald (2001) also highlighted the unavailability of suitable GP posts for women.

The shortage of GPs and its effect was discussed in some studies. For instance, Lebanese primary care stakeholders mentioned that primary care services were missing because of the shortage in the primary care staff (Alameddine *et al.*, 2016). The shortage of staff who speak Arabic, the competence in attracting qualified primary care doctors by other countries, and preference of doctors to seek managerial positions were among the hurdles facing recruitment in Qatar (Alameddine *et al.*, 2017).

As previously discussed, many of the included studies mentioned the need for more flexible GP jobs and contracts to increase recruitment and retention. Many GPs and trainees were keen to have more flexibility in the appraisal and revalidation process for part-time, portfolio and locum GPs to increase their retention (Dale *et al.*, 2016) and to have more flexible jobs to achieve a better work-life balance (Dale *et al.*, 2017). Several studies were clear that increasing the job flexibility would improve recruitment and retention (Jenson, Hutchins and Rowlands (2006); Leese et al., (2002); Williams *et al.*, 2001). Alameddine *et al.* (2017) also mentioned that the lack of job stability is jeopardizing primary care doctors' retention.

Flexibility was also recommended to accommodate GPs' demands in pursuing dual careers. For instance, Young, Leese and Sibbald (2001) argued that GP job contracts should allow GPs to be in dual careers and give them the chance to rotate between different health specialities.

Several studies mentioned GPs' preference for salaried posts. For instance, Dale *et al.* (2017) mentioned that younger GPs, especially women, preferred salaried employment. According to Young, Leese and Sibbald (2001), more than 50% of GP leavers who anticipated returning to primary care preferred salaried jobs. However, the unadjusted results in the study conducted by Fletcher *et al.* (2017) showed that salaried GPs were the least likely to quit their jobs.

Although some of the doctors who faced work-life balance issues have considered working as locums (Dale *et al.*, 2017), others did not see this as an option. GPs perceived working as a locum or non-principal as having the disadvantage of lacking job security and being short and intermittent employment (Evans, Lambert and Goldcare, 2002). Sansom *et al.* (2018) summarised the GP retention dilemma by mentioning that it is a multifactorial problem that has a work-related, personal, and social context.

6.4. Policy recommendations:

Policy recommendations are not a factor in the STF; however, most of the papers discussed such recommendations. Therefore, these are included here under a theme of policy recommendations. These address five areas of recruitment and retention: education, workplace, health, financial and political-based polices, as demonstrated in Box 3.

Box 3 Recruitment and Retention Policy Recommendations

Recruitment:

- Integration of primary care teaching and speciality courses, compulsory primary care clerkships (Lorant *et al.*, 2011), and increasing exposure to primary care (Alameddine *et al.*, 2016, 2017).
- Coordination between academic institutions and countries' authorities, university scholarships, and sponsoring students in medical majors that could feed into primary care (Alameddine *et al.*, 2016, 2017).
- Vocational training schemes (Blades *et al.*, 2000; Alameddine *et al.*, 2016), finance postgraduate programmes and establish short-term programmes (Tandjung *et al.*, 2013).
- Organisational policies including: encouraging group practices (Lorant *et al.*, 2011; Tandjung *et al.*, 2013), reinforcing the GP's role in the multidisciplinary team, encouraging GPs to share a common infrastructure, and delegation of administrative tasks (Lorant *et al.*, 2011).

- Increasing the flexibility of GPs' working conditions, including part-time working (Lloyd and Leese, 2006; Tandjung *et al.*, 2013) flexible partnership structures (Young, Leese and Sibbald, 2001), and increasing salaried employment slots (Williams *et al.*, 2001; Young, Leese and Sibbald, 2001).
- Financial incentives, health insurance, family benefits, educational benefits for GPs' children, and accommodation compensation, especially for expatriate GPs (Alameddine *et al.*, 2017).

Retention:

- Provision of professional development opportunities (Alameddine *et al.*, 2016), increasing professional development, training, and attending international conferences (Alameddine *et al.*, 2017), mandatory study days and improving access to information to help GPs stay up-to-date (Sansom *et al.*, 2016).
- Providing supportive staff, giving GPs dedicated time for administrative tasks, sharing the workload with other practices (Sansom *et al.*, 2016), encouraging group practices and reinforcing the GP's role in the multidisciplinary team (Lorant *et al.*, 2011).
- Providing a supportive work environment and peer support (Alameddine *et al.*, 2016; Sansom *et al.*, 2016; Chilvers *et al.*, 2019).
- Reducing administrative workload, delegating administrative tasks (Blades *et al.*, 2000; Alameddine *et al.*, 2017; Cortez *et al.*, 2019), expanding the role of other medical staff (Owen *et al.*, 2019), decreasing workload intensity, workload volume, out-of-hour commitments (Dale *et al.*, 2015).
- Developing policies to allow longer consultation times, greater clinical autonomy (Dale *et al.*, 2015) and introducing mandatory study days (Sansom *et al.*, 2016).
- Supporting a flexible working environment such as flexible working hours (Sansom *et al.*, 2016; Alameddine *et al.*, 2017; Chilvers *et al.*, 2019; Long *et al.*, 2020), establishing an appropriate interface between partnership/principal model, flexible salaried contracts, part-time opportunities (Young, Leese and Sibbald, 2001; Lloyd and Leese, 2006; Dale *et al.*, 2015), flexible career schemes in terms of working in multiple practices (Chilvers *et al.*, 2019), and introducing portfolio careers (Leese *et al.*, 2002; Marchand and Peckham, 2017; Chilvers *et al.*, 2019).
- Introducing a GP buddy system (Sansom *et al.*, 2016), providing GPs' spouse's access to employment, providing education for children, and providing easy access to relatives and family (Kelley *et al.*, 2008).
- Improving GPs' remuneration (Lorant *et al.*, 2011; Alameddine *et al.*, 2016; Marchand and Peckham, 2017; Chilvers *et al.*, 2019), financial support to primary care (Dale *et al.*, 2015; Alameddine *et al.*, 2016; Owen *et al.*, 2019), and other financial incentives (Alameddine *et al.*, 2017).

7. Discussion:

7.1. Overview of the results:

7.1.1. Recruitment:

7.1.1.1. Individual factors:

This review demonstrated that more females were choosing primary care as their career and more males were leaving, supporting the notion of the femininization of the primary care field and the need to accommodate their needs to keep them in the workforce. Although the wide breadth of primary care was an attractive element, it was also perceived as a negative factor, which might support calls for enhancing the role of GPs with special interests to attract more doctors to the field. Specific values were identified in this review as attractive factors for choosing primary care, such as the doctor-patient relationship, continuity of care, and a good lifestyle.

7.1.1.2. Contextual factors – social systems:

This systematic review also showed the need for increasing exposure to primary care during medical school; however, it could be argued that increasing exposure without improving the working conditions of GPs might discourage students from seeking it as a career. Family can play an essential role in pursuing a career in primary care, either through their effect on doctors' decisions or by doctors seeking a career that is compatible with family life. While the perception of lonely working in primary care had a negative influence on choosing it as a career, the perception that it had good working conditions was positive.

7.1.1.3. Contextual factors – environmental and societal systems:

Political decisions seem to have negatively affected the recruitment of GPs; however, this might be because most of the included papers are from countries suffering from primary care doctors' recruitment problems. Geographical location can also influence GPs' recruitment, especially the desire to work in a specific location. The failure of the employment market and the matching system were identified as among the causes of the primary care workforce crisis, which could be reduced by establishing or increasing flexible contracts. There was, however, mixed-evidence regarding the effect of monetary incentives on GPs' recruitment.

7.1.2. Retention:

7.1.2.1. Individual factors:

Although this review showed that more older GPs were leaving, a relationship between the intention of leaving and nearing the age of retirement cannot be ruled out. The causes of quitting primary care differed according to gender; females quit mainly for domestic circumstances while males left for work-related issues. In terms

of health, psychological stress was one of the main reasons for leaving primary care, which could be argued to be a modifiable factor that can be mitigated through support and occupational health services. Some GPs left because of having other interests, suggesting that greater provision of dual or portfolio careers could be helpful. It can be concluded that reductions in GPs' satisfaction, morale, prestige, and burnout, all impact on their retention. These factors are all adversely affected by system factors such as organisational changes, political decisions, and the media. In addition, compromising the perceived values of primary care, especially the doctor-patient relationship and continuity of care can reduce the attractiveness of primary care and decrease GPs' retention.

7.1.2.2. Contextual factors – social systems:

This systematic review showed that improving and investing in primary care postgraduate training programs, increasing CPD activities, and establishing or improving returner schemes could enhance GPs' retention. Although compatibility with family life was an attractive factor to choose primary care as a career, it was also the reason to leave it. The relationships between GPs and their peers were also seen as important in their retention, and conflicts might encourage their decision to quit. Workload, especially the administrative workload, was a serious influencer of GPs' decisions to quit primary care. In addition, the current rules and regulations governing primary care are adversely affecting GPs' retention.

7.1.2.3. Contextual factors – environmental and societal systems:

Political decisions have a particularly negative impact of GPs' retention through organisational changes, workload, and changing the content of primary and GPs' roles. However, it could be argued that such results were driven by the high number of articles that studied the UK and other primary care systems facing retention crises and organisational changes that have taken place there. Emigration, moving to another area, and the desire to work in specific locations, were also important geographical factors negatively affecting GPs' retention. Establishing or supporting returner schemes and increasing the flexibility of GPs' working contract might improve their retention. Nevertheless, there was mixed-evidence regarding the effect of monetary incentives on GPs' retention.

7.2. Applicability of the STF:

The use of the STF was of great benefit, as it helped to guide the extraction and analysis of the data. In addition, the framework helped in categorising and identifying the factors affecting GPs' recruitment and retention at individual and system levels. It also highlighted some of the gaps in the literature in relation to certain factors

such as historical trends, globalisation, and personality. However, the framework can be improved in some aspects. For instance, the workplace factor could be modified or divided into several factors to include elements such as working hours, rules and regulations, and working environment. Furthermore, the absence of any consideration of reimbursement and salary is an important omission when considering career decisions. Therefore, some components and sub-themes were developed and added to the framework by AA and reviewed by COD according to the amount of information extracted. Other components were merged because, in relation to this literature, there was little consideration – these included sexual orientation, self-concept, globalisation, and historical trends Table 12.

7.3. Applicability of the results to Kuwait:

Most of the studies included were from western countries, especially the UK, raising concerns that the findings might be less applicable to Kuwait. Overall, the findings were generalisable across health systems and, as a result, are considered applicable to Kuwait. In terms of individual system factors, the Kuwaiti health care system could focus more on the needs of female primary care doctors, paying attention to work-life balance and the concerns of women balancing work and career development with family needs. Policymakers also could implement policies that ensure primary care doctors' satisfaction, reducing work-related burnout and work-related adverse health effects. Two areas could use findings from the international literation to develop primary care as a career in Kuwait. First, developing GPs with special interests as a career option and, second, adopting policies that support work-related values, such as doctor-patient relationships.

In terms of the social system, the role of medical schools and their curricula could be developed in Kuwait, especially increasing exposure to primary care. Improving and increasing CPD activities and addressing shortfalls of postgraduate programmes need to be addressed and explored. The role of the work environment, such as workload and working hours, is an area that featured across different countries and health systems and is likely to be no different in Kuwait. The role of family, friends, and peers is also very likely to apply in Kuwait, although how it affects recruitment and retention, especially with the cultural differences between Kuwait and western countries, needs exploration.

Environmental and societal systems are different in Kuwait compared to Western countries. The finding that political decisions can impact on recruitment and retention indicates the need to explore the impact of such decisions on recruitment and retention in Kuwait. The employment market for primary care in Kuwait also needs to be studied to explore how it influences individual doctor's decisions, especially in relation to staying

in primary care. Although it is a small country, the role of geographical location also needs to be explored if it has an effect on doctors' recruitment and retention. Much of this is addressed in the quantitative and qualitative studies reported in Chapters 8 and 9.

7.4. Strengths and limitations:

This systematic review has several strengths. It included articles regardless of the country the study was conducted in, unlike previous systematic reviews conducted by Marchand and Peckham (2017), Verma *et al*. (2016), and Long *et al.* (2020). In addition, the use of a theoretical framework explored and classified the causes of recruitment and retention in a systematic approach. The framework also highlighted some of the gaps in the current literature. Another strength was submitting the protocol to the PROSPERO registry of systematic reviews. This study had other strengths: double screening, double data extraction, and the quality appraisal of the included studies. There were also some limitations, including limiting the research to a specific time period and including only English language papers. The grey literature was not searched, which might contain some related information. Another limitation is that most of the included studies were conducted in settings facing a recruitment or retention problem; while this may be unexpected, it raises the question whether countries with more successful recruitment or retention approaches are not being researched, thus losing the opportunity to learn valuable lessons around successful strategies, for example as a result of political decisions or direction from professional bodies. Despite fitting with this project aims, a final limitation might be the excluding rural studies that could have explored more recruitment and retention factors.

7.5. Summary:

In this chapter, the methodology, results, and the analysis of the systematic review were discussed. This systematic review showed that despite the importance of individual factors, arguably system factors played a more influential role in GPs' recruitment and retention crisis, especially the adverse effect of political decisions on rules and regulations, the change in primary care organisational structure, and the role of GPs. In addition, many of the perceived advantages of primary care as a career were also reported to be the reason for leaving primary care when the perception did not live up to the actual experience, such as working hours, workload, and compatibility family life. Thus, it could be argued that health care systems failed to accommodate the needs of GPs by creating more flexible working conditions and establishing an interesting working environment.

Chapter Six: Cross Sectional Survey

1. Introduction:

This part of the PhD project aimed to address the second objective, which was to examine the career intentions of primary care doctors working in clinical practice. The chapter will discuss in detail the methodology used to conduct this study by explaining the process of obtaining ethical approval, the population studied, and the process of the distribution and collection of the questionnaires. The analysis plan will be described, followed by the results and interpretation. The chapter will finish with a discussion of the strengths and limitations of the study, followed by a summary of the chapter.

2. Rationale:

As discussed in Chapters 1 and 3, there is a recruitment and retention crisis of primary care doctors worldwide and in Kuwait. The extent of this was not known in Kuwait, which is why this part of the PhD aimed to explore the current and future career intentions of currently practising primary care doctors.

3. Design and Settings:

This was a descriptive cross-sectional survey of medical doctors working in primary care services in Kuwait. In 2016, the total number of primary care centres in Kuwait was 104, of which two centres provide specialised clinic services only and seven centres were closed for reconstruction purposes (Central Directorate of Primary Care, 2016). A pragmatic decision was made to survey around 25% of the remaining 95 primary care centres, namely 25 centres from the five different health districts in Kuwait. One district was excluded because no primary care centres were under its administrative authority.

The selection of 25 centres was determined by two factors. First, it was not possible to send the questionnaires electronically to the primary care doctors, as most of the doctors do not have an official K-MOH email. This meant that delivery of the survey was carried out manually. I delivered the surveys manually, after contacting each of the centres' managers or deputy managers. The same process was also used to collect the questionnaires, requiring multiple return trips to each centre. Therefore, logistically it was too time consuming and difficult to distribute and collect questionnaires from all of the centres by a single researcher. However, this approach also had advantages: my presence in the primary care centres to deliver and collect questionnaires provided an opportunity to discuss the study with centre managers and to answer questions from primary care doctors. This helped to build trust in the project and to reassure participants that I was independent of the Ministry of Health and that their responses would be confidential and anonymous.

The 25 centres were randomly selected using the 'Select Cases' option in SPSS v12. Two centres were added to the districts with a higher number of centres from districts with fewer numbers, resulting in two districts with six centres and two with four centres. In order to preserve anonymity, health districts were assigned a letter from A to E. Although the ethical approval was obtained by K-MOH to cover distribution to all of the centres and supposed to be circulated to all of the centres, some of the centres' managers asked to see the ethical approvals again before agreeing to distribute them in the centre.

3.1. Study population:

The study population was medical doctors working in the primary care centres, with no limitations to the physicians' age, nationality, or qualification. However, doctors working in specialised clinics, such as surgery and ENT clinics, were excluded, since their main practice sites are hospitals rather than primary care. In addition, doctors currently in the family medicine training program were excluded as only those currently on primary care rotations would have been captured, and they were not been fully enrolled in the primary are workforce.

3.2. Survey Instrument Identification and Piloting:

The systematic review provided an opportunity to identify any surveys used to assess the career intentions of family doctors. This identified a questionnaire developed by Dale *et al.* (2015) to assess GPs' career intentions in the UK. The same survey instrument was also used to investigate the retention of GPs after recent policy changes in the UK (Owen *et al.*, 2019). Since the questionnaire was developed for the UK health system, it was reviewed by AA and both supervisors to check its compatibility for the Kuwaiti health care system. Although not entirely transferable, this was felt to be the most appropriate survey to use; permission was therefore sought from the study team to use the questionnaire.

Some changes were required to make the questionnaire suitable for use in Kuwait. These changes were made by myself, prior to piloting, based on my knowledge of primary care in Kuwait. Initially, some terminologies were changed, such as changing NHS to the Ministry of Health and adding the terms family medicine and family physicians as relevant. Other changes were made to the choices of some questions, for instance, limiting the answers to the question about other roles to undergraduate or postgraduate educational roles, running specialized clinics, and quality or accreditation responsibilities. The answer choices to questions about the causes of the increase or decrease of workload were also changed. Answer choices were the participants'

duration of work and the intended duration of working in primary care. The answers to the question about factors motivating participants to leave were changed, in which (medical indemnity payment) was changed to (low payment compared to other specialties) and answers related to revalidation and pension taxation were deleted, as these were not applicable. Likewise, the answers to the question about factors encouraging participants to stay were edited by deleting choices about working on a part-time basis, flexible career schemes, retainer schemes, and the introduction of an educational support network. Four questions were deleted, one related to the change in number of appointments, one related to appraisal and revalidation, one about some initiatives implemented in the NHS to improve retention, and one about the practice area. The question about the centre where the participant was working was changed to the health district and a question added about participants' position (defined as rank).

After making these changes, the questionnaire was piloted with five Kuwaiti family physicians to assess its suitability and acceptability, unfortunately the survey was not piloted with non-Kuwaiti doctors. Brief interviews were conducted after they completed the questionnaire to assess their views of its ease of completion and relevance to the Kuwaiti setting. This resulted in making several small changes to the survey instrument, for example, adding the phrase (general practice) or (general practitioner) in addition to family medicine and family physicians, respectively. Adding clarification examples to the first question and adding guiding statements such as (If your answer is yes, please continue to) after questions one and six. In the questions about the total and clinical working hours, answers choices were added (Less than 20, 20-30, 30-40, more than 40 hours). In addition, an answer choice was added to the question about the causes of reduction in working hours, which is (promoted to a higher rank).

Some words were changed for more clarification, the word morale was replaced by enthusiasm, confidence, and discipline, litigation was replaced by legal actions, reimbursement was changed to payment, embarkment was changed to starting a career, and population size was changed to the population covered. Five questions were added, one about the number of night duties, two questions related to the duration of visits to specialised clinics similar to general clinics, one asking about the participants' centre working hours, and a final question about participants' nationalities. The final survey instrument is available in Appendix 13. The survey was not translated into Arabic as it was recognised that the doctors in the study have good levels of English.

3.2.1. Survey Instrument Components:

The questionnaire comprised 35 questions addressing six components: physician roles, working hours, number and duration of patients' visits, job satisfaction and morale, career intentions, and personal and centre's demographics.

3.3. Ethical approvals:

A detailed proposal for the PhD project, including this quantitative study, was developed and submitted to The Standing Committee for Coordination of Medical Research in K-MOH. The committee approved the research on the 30th of January 2018. After that, the same proposal was submitted to the MVLS College Ethics Committee, which approved it on the 3rd of April 2018. Since the ethical approval granted form K-MOH was valid for one year, a renewal of the ethical approval was granted on the 30th of January 2019. Copies of the ethical Approvals are in Appendices 1, 2, and 3.

3.4. Data collection:

The distribution of the survey started in June 2018, and each of the twenty-five centres received a unique code. The researcher approached the manager or deputy manager in each centre, who distributed the survey to the doctors working in the centre. Each doctor received an envelope with the questionnaire and participant information sheet and was advised to place the survey in the envelope and seal it after completion. One and two week reminders were sent to the manager or deputy manager of each centre to keep tracking the surveys. The process of distribution and collection of the survey took approximately two months and resulted in collecting 191 surveys with a response rate of approximately 81%; Table 13 gives the response rates by Primary Care Centre. After that, the data was entered into SPSS software by AA.

Table 13 Summary of Primary Care Centres & Response Rates

Region	Centres	Total number of DRs*	Available DRs	DRs on leave	Filled surveys	Response rate
A	A - Centre 1	10	7	3	7	100%
	A - Centre 2	18	10	8	5	50%
	A - Centre 6	8	8	0	8	100%
	A - Centre 8	13	11	2	10	90.9%
	A - Centre 16	11	7	4	7	100%
	A - Centre 21	3	2	1	2	100%
B	B - Centre 1	17	11	6	11	100%
	B - Centre 3	24	15	9	11	73.3%
	B - Centre 12	18	9	9	7	77.7%
	B - Centre 13	17	12	5	11	91.6%
C	C - Centre 2	13	7	6	5	71.4%
	C - Centre 6	18	11	7	10	90.1%
	C - Centre 9	12	11	1	7	63.6%
	C - Centre 18	10	6	4	2	33.3%
	C - Centre 21	14	9	5	8	88.8%
D	D - Centre 3	16	13	3	2	15.3%
	D - Centre 5	11	8	3	8	100%
	D - Centre 7	10	8	2	8	100%
	D - Centre 11	13	10	3	10	100%
	D - Centre 16	10	9	1	9	100%
	D - Centre 21	11	7	4	2	28.5%
E	E - Centre 1	13	11	2	8	72.7%
	E - Centre 2	15	12	3	11	91.6%
	E - Centre 6	13	11	2	11	100%
	E - Centre 10	14	11	3	11	100%
Total	25 Centres	332	236	96	191	80.9%

Note: DRs = Doctors, * Including the head of the centre when s/he fits the inclusion criteria

3.5. Data analysis plan:

3.5.1. Survey coding:

The data from the questionnaires were coded, entered, and analysed using SPSS software version 26. Some of the variables were recoded after data collection for analysis purposes. For example, the duration of working as a primary care doctor (question three), was dichotomised to ‘ten years or less’ and ‘more than ten years’. The Likert scale of questions twenty-three and twenty-four were changed to three categories: not important, neutral, and important. Similarly, both the current morale level (question fifteen) and current satisfaction level (question seventeen) were recoded into three categories of low, neutral, and high, and dissatisfied, neutral, and satisfied, respectively. In question nineteen, the participants’ answers were recoded as ‘less than five’ and ‘five years or more’, to focus more on the intentions of leaving primary care as a short-term plan.

Categories were created for some open-ended questions. The answers to question six were categorised into less than two, two or more, and no night duties. In questions eleven to fourteen, the answers were categorised into less than ten minutes, eleven to fifteen minutes, sixteen to twenty minutes, more than twenty minutes, other choices.

The population covered by the participants' centre (question twenty-eight) was categorised as up to 25,000, 25,000 to 50,000, 50,001 and more, and do not know. Question twenty-nine focused on the centre's working hours, and was coded as seven, fourteen, seventeen, twenty-four hours, and other. Participants' age was coded as both a continuous variable and categorised as 25-34, 35-44,45-54,55-64, and 65 and over. Regarding non-Kuwaiti participants (question thirty-two) their nationalities were grouped as Egyptian, Syrian, other Arab, Asian, European, North American, and other nationalities. Respondents' highest qualification was categorised as KBFM, first part of KBFM, masters of family medicine, or other family medicine or primary care qualification, other masters qualification, diploma, medical degree, and other qualifications. Both countries of highest medical qualification and medical degree were grouped as Kuwait, Egypt, Syria, other Arab, Asia, Europe, North America, and others.

3.5.2. Analysis:

Descriptive statistics for each of the survey questions was performed and presented as numbers and percentages. Crosstabs of demographic variables were conducted, with Pearson's Chi-squared tests used to test for significance. A p-value of 0.05 and less was considered significant. The primary outcomes of interest in this survey were exploring the number of primary care doctors in Kuwait intending to leave the primary care clinical field. Other outcomes of interest are the relationships between leaving primary care and other personal and work-related factors.

Crosstabs and chi-squared tests were conducted for the primary outcome, leaving primary care for an alternative career, and the secondary outcomes, years planned to work as primary care doctor and retirement decisions, to examine associations between these outcomes and other survey items covering demographic, educational, and work-related factors. For those questions with a scaled response, Cronbach's alpha test was performed to measure their internal consistency and reliability. All values were above 0.80, indicating a high level of internal consistency.

Those variables which had a significant association with the primary and secondary outcomes were then included in binary logistic regression models, wherein the dependent variables were leaving primary care in five years, retirement in five years, and years planned to work as a primary care doctor and controlled for age, gender, nationality, and health district. The independent variables were the personal and work-related factors that might have an effect, such as morale, satisfaction, workload, and working hours. The independent variables were selected according to the results in the systematic review, which showed that these influenced career decisions. Age was included as a continuous variable in the regression models to reduce the categories in the regression models and to aid more straightforward interpretation. To avoid multicollinearity, which is the effect of a closely related factor on the regression model, such as the current satisfaction and morale and the levels of satisfaction and morale in the last two years several regression models were generated for the outcomes leaving primary care and number of planned years of working as a primary care doctor. The hypothesis tested was that independent and control variables can affect decisions to leave primary care or the length of time someone intends to remain working in primary care.

The data extraction form from the systematic review was used as a template to map the answers of the open-ended questions and analyse them according to the STF (Patton and McMahon, 2014). For brevity, only the responses to questions 25 and 26 are presented here, as these provided the richest sources of information.

4. Results:

4.1. Demographics:

The majority of the participants were female, aged 35 to 44 years, working in primary care for less than ten years, and non-Kuwaitis, of which the majority were Egyptians (Table 14). The mean age was 44 (range 26 to 70). Approximately one-third of the participants were senior registrars and the majority, 27%, held the qualification of medical degree only. Egypt was the main country where participants obtained their medical degree and highest medical qualification. Regarding centres' demographics, most of the centres were open 17 hours per day. Most of the centres covered a population of up to 25000; however, around 21% of participants did not know the size of the population covered. There was a significant difference in the gender distribution between the health district, with more males in district E and more females in districts A, B, and C areas (Chi-square= 25.624, P-value= 0.00003). Male doctors were more likely to be non-Kuwaiti, and female doctors Kuwaiti (Chi-square= 21.358, P-value = 0.000003). Men were mainly senior registrars; a higher number of females were assistant registrars and consultants (Chi-square= 15.471, P-value= 0.0038), Table 15.

Table 14 General Demographics of The Participants

	Number (%)
Gender (total 188)	
Male	82 (43.6)
Female	106 (56.4)
Age (total 187)	
25-34	36 (19.3)
35-44	70 (37.4)
45-54	37 (19.8)
55-64	37 (19.8)
65 and above	7 (3.7)
Nationality (total 188)	
Kuwaiti	60 (31.9)
Non-Kuwaiti	128 (68.1)
Non-Kuwaiti nationalities (total 128)	
Egyptian	76 (62.8)
Syrian	21 (17.4)
Other Arab	13 (10.7)
Asian	7 (5.8)
European	1 (0.8)
North American	1 (0.8)
Other	2 (1.7)
Duration of working as GP (total 191)	
10 years or less	98 (51.3)
More than 10 years	93 (48.7)
Rank (total 180)	
Assistant registrar	36 (20)
Registrar	48 (26.7)
Senior registrar	53 (29.4)
Specialist	28 (15.6)
Consultant	15 (8.3)
Highest medical qualification (total 163)	
Kuwaiti board of FM	21 (12.9)
First part of FM board, MSc FM, or other FM qualification	24 (14.7)
Other MSc qualification	30 (18.4)
Diploma	34 (20.9)
Medical degree	44 (27)
Other	10 (6.1)
Country of highest medical qualification (total 124)	
Kuwait	28 (22.6)
Egypt	47 (37.9)
Syria	15 (12.1)
Other Arab countries	7 (5.6)
Asia	6 (4.8)
Europe	17 (13.7)
Other	4 (3.2)
Country of medical degree (total 174)	

Kuwait	36 (20.7)
Egypt	81 (46.6)
Syria	20 (11.5)
Other Arab countries	15 (8.6)
Asia	8 (4.6)
Europe	13 (7.5)
Other	1 (0.6)
Centre working hours (total 180)	
7 hours	13 (7.2)
14 hours	5 (2.8)
17 hours	87 (48.3)
24 hours	57 (31.7)
Other	18 (10)
Health district (total 190)	
A	39 (20.5)
B	39 (20.5)
C	32 (16.8)
D	39 (20.5)
E	41 (21.6)
Population Covered (total 130)	
Up to 25000	51 (39.2)
25001-50000	28 (21.5)
50001 and above	24 (12.6)
Do not know	27 (20.8)

FM= Family medicine

Table 15 Significant Demographic Factors

	Male		Female		Chi Square, P-Value
	N	%	N	%	
Health district					Chi-square= 25.624
A	10	26.3%	28	73.7%	
B	14	36.8%	24	63.2%	P-value= 0.00003
C	9	28.1%	23	71.9%	
D	18	46.2%	21	53.8%	
E	31	75.6%	10	24.4%	
Nationality					Chi-square= 21.358
Kuwaiti	11	18.6%	48	81.4%	
Non-Kuwaiti	69	54.8%	57	45.2%	P-value= 0.000003
Position					Chi-square= 15.471
Assistant registrar	9	25%	27	75%	
Registrar	24	51.1%	23	48.9%	P-value= 0.0038
Senior registrar	30	56.6%	23	43.4%	
Specialist	11	40.7%	16	59.3%	
Consultant	2	13.3%	13	86.7%	

Note: N=Number

4.2. Physician role:

More than half of the sample, (98), were not involved in any other roles. Out of those involved in other roles, the main activities were running specialised clinics (35 participants) and accreditation and quality roles (35); involvement in research activities were reported by only nine participants. Some participants were previously involved in other activities, with running specialised clinics, undergraduate student tutoring, and accreditation and quality roles being the most common.

4.3. Working hours:

Most of the sample, 69.7%, were working more than 40 hours per week; only 1.1% worked less than 20 hours per week. When asked about working hours in direct patient contact, 42.4% estimated they were working more than 40 hours per week. The majority of participants, 61.1%, had less than two night duties per week, and a quarter did not have any night duties. More than half of the participants reported no change to their working hours, around 40% felt they had increased, and only a minority stated that they had decreased. While workload was the leading cause of the increase in working hours, promotion to a higher position was the main cause of its reduction. Results are presented in Table 16.

Table 16 Working Hours, Night Duties, and Causes of Changes in Working Hours

Factor	N (%)
Total working hours per week (total 185)	
Less than 20	2 (1.1)
20 – 30	21 (12.4)
30 – 40	33 (30.3)
More than 40	129 (69.7)
Working hours in direct patient contact per week (total 191)	
Less than 20	10 (5.2)
20 – 30	37 (19.4)
30 – 40	63 (33)
More than 40	81 (42.4)
Night duties per week (total 179)	
Less than 2	110 (61.5)
2 or more	24 (14.4)
None	45(25.1)
Change in working hours in the last 2 years (total 190)	
Increased	75 (39.7)
Remained the same	105 (55.6)
Decreased	9 (4.8)
Causes of reduction in working hours (total 190, 180 not applicable) *	
Family circumstances	1 (11.1)
Poor physical health	2 (22.2)
Poor mental health	0 (0)
Promoted to a higher rank	7 (77.8)
Causes of increase in working hours (total 190, 114 not applicable) *	
Increase workload	67 (94.4)
Assigned to an administrative role	9 (12.7)
Assigned to other clinical roles	13 (18.3)

Note: N=Number, * total percentage can be more than 100 as participants can choose more than one answer

4.4. Number and duration of patient visits:

The majority of participants, 65.4%, thought that the number of patients had increased over the last two years. More than half indicated that patients' visits in GP clinic lasted less than ten minutes. When asked what length a patient visit should be, approximately one-third suggested it should be less than ten minutes, and 27% stated that the duration should be between 11-15 minutes. Patients' visits to specialised clinics were longer (Table 17). Unfortunately, a number of participants misunderstood the questions in this section and answered it as a question about the frequency of visits rather than the duration; for example, several answered (twice a week). As a result, these questions were not included in the chi-square and regression analyses.

Table 17 Number and Duration of Patient Visits in GP and Specialised Clinics

Factor	N (%)
Patient visits in the last 2 years (total 179)	
Increased	117
Remained the same	(65.4)
Decreased	41 (22.9)
Do not Know	16 (8.9)
	5 (2.8)
Duration of patient visits in GP clinics (total 177, 2 not applicable)	
Less than 10 minutes	99 (55.9)
11-15 minutes	17 (9.6)
16-20 minutes	2 (1.1)
More than 20 minutes	1 (0.6)
Other	6 (3.4)
Misunderstood the question	52 (29.4)
Ideal duration of patient visits in GP clinics (total 178, 1 not applicable)	
Lest than 10 minutes	52 (29.2)
11-15 minutes	48 (27)
16-20 minutes	13 (7.3)
More than 20 minutes	7 (3.9)
Other	6 (3.4)
Misunderstood the question	52 (29.2)
Duration of patient visits in specialised clinics (total 150, 20 not applicable)	
Less than 10 minutes	14 (9.3)
11-15 minutes	27 (18)
16-20 minutes	31 (20.7)
More than 20 minutes	18 (12)
Other	2 (1.3)
Misunderstood the question	58 (38.7)
Ideal duration of patient visits in specialised clinics (total 165, 8 not applicable)	
Less than 10 minutes	5 (3)
11-15 minutes	28 (17)
16-20 minutes	33 (20)
More than 20 minutes	38 (23)
Other	2 (1.2)
Misunderstood the question	59 (35.8)

Note: N=Number

4.5. Job satisfaction and morale:

Despite workload, more than half of the sample reported experiencing high morale (108, 56.8%). This had increased, (79, 41.4%), or remained the same, (99, 47.1%), in the last two years. Most of the participants were either satisfied, (89, 46.6%), or neither satisfied nor dissatisfied (79, 41.4%). For more than half, this had not changed over last two years.

4.6. Career Intentions in the next five years:

Around 57% of respondents mentioned that their career plans had not changed compared to two years ago. The most common chosen five-year career plan was increasing teaching and research activities followed by increasing management responsibilities. However, 23.6% of participants did state a desire to leave primary care in the next five years. Several factors were rated as important in formulating the participants' decision to leave primary care. The highest scoring factors were related to workload, working hours, job satisfaction, and family commitments. Reduction in workload and working hours, increasing clinical autonomy and annual leave, providing protected time for education, and increasing payment were all identified as factors that would encourage participants to stay in primary care (see Table 18).

Table 18 Respondents Career Intentions in The Next Five Years

Factor	N (%)
Number of planned years working in FM/PC (total 191)	
Less than 5 years	58 (31.0)
5 or more years	129 (69.0)
Career plans compared to 2 years ago (total 188)	
The same	107 (56.9)
Changed	81 (43.1)
Career in the coming 5 years* (total 191)	
Reduce hours of clinical work	59 (30.9)
Increase hours of clinical work	46 (24.1)
Reduce management responsibilities	23 (12)
Increase management responsibilities	97 (50.8)
Reduce teaching/training/research responsibilities	12 (6.3)
Increase teaching/training/research responsibilities	103 (53.9)
Retirement	17 (8.9)
Leave general practice for an alternative career	45 (23.6)
No plans to change	38 (19.9)
Don't know	36 (18.8)

Note: N=Number, * Number for participants who answered as (Yes) for each career plan, *Total percentage can be more than 100 as participants can choose more than one answer, FM= Family medicine, PC = Primary care

4.7. Answering the research questions:

Respondents were asked to rank a number of factors in terms of their importance in influencing decisions to leave of remain in primary care.

4.7.1. Leaving primary care for an alternative career in the next five years:

A number of variables appeared to be important to participants decisions to leave for another career or retire in the next five years from primary care (Table 19). Five factors were rated as important or very important in this decision for 60% or more of the participants: volume of workload, intensity of workload, working for

seven days a week, reduced job satisfaction, and family commitments. A further six factors were important or very important to over half the participants (Table 19). Conversely, addressing many of these factors would be important or very important in encouraging participants to stay in primary care. The factors most highly rated by participants as important in making them decide to stay were: more flexible working conditions (83.0%); having more time to spend with patients (77.3%); improving skill mix (76.8%); and increasing pay (76.4%) (Table 19).

Table 19 Factors Influencing Respondents Decision to Leave or Stay in Family medicine / Primary Care

Factor	N (%)		
	Important or Very Important	**Neutral**	**Not important or Not at all Important**
Factors contributing to leave or retire from FM/PC			
Volume of workload, (total 180)	110 (61.1)	34 (18.9)	36 (20)
Intensity of workload, (total 172,)	104 (60.5)	36 (20.9)	32 (18.6)
Lack of time for patient contact, (total 173)	97 (56.1)	46 (26.6)	30 (17.3)
Too much time spent on unimportant tasks, (total 169)	101 (59.8)	33 (19.5)	35 (20.7)
Poor flexibility of hours (total 160)	83 (51.9)	47 (29.4)	30 (18.8)
Potential introduction of 7 days a week working (total 170)	116 (67.8)	35 (20.5)	20 (11.7)
Reduced job satisfaction (total 176)	111 (63.1)	38 (21.6)	27 (15.3)
Age (total 173)	87 (50.3)	35 (20.2)	51 (29.5)
Family commitments (total 171)	104 (60.8)	35 (20.5)	32 (18.7)
Ill health (total 170)	89 (54.2)	29 (17.1)	52 (30.6)
Starting a career outside family medicine (total 173)	61 (35.3)	34 (19.7)	78 (45.1)
Planned career break (total 163)	53 (32.5)	32 (19.6)	78 (47.9)
Increased risk of legal actions (total 173)	67 (38.7)	37 (21.4)	69 (39.9)
low payment compared to other medical specialities (total 181)	102 (56.4)	32 (17.7)	47 (25.9)
Factors encouraging to remain in FM/PC			
Reduced volume of workload (total 186)	134 (72)	31 (16.7)	21 (11.3)
Reduced intensity of workload (total 181)	130 (71.8)	28 (15.5)	23 (12.7)
More flexible working conditions (total 176)	146 (83)	19 (10.8)	11 (6.2)
More time to spend with patients (total 185)	143 (77.3)	22 (11.9)	20 (10.8)
Improve skill-mix in the clinic (total 181)	139 (76.8)	28 (15.5)	14 (7.7)
Shorter clinic opening times (total 176)	113 (64.2)	36 (20.5)	27 (15.3)
Less administration (total 170)	79 (46.5)	40 (23.5)	51 (30)
No on-call duties (total 170)	96 (56.1)	33 (19.3)	42 (24.6)
Greater clinical autonomy (total 166)	100 (60.2)	48 (28.9)	18 (10.8)
Additional annual leave (total 182)	121 (66.5)	32 (17.6)	29 (15.9)
Opportunity for a sabbatical (total 156)	83 (53.2)	52 (33.3)	21 (13.5)
Protected time for education and training (total 179)	132 (73.7)	30 (16.8)	17 (9.5)
Extended interests (total 176)	118 (67)	35 (19.9)	23 (13.1)
Increased pay (total 182)	139 (76.4)	17 (9.3)	26 (14.3)
Incentive payment to encourage continuing to practice (total 180)	129 (71.7)	27 (15)	24 (13.3)

Note: N=Number, FM= Family medicine, PC = Primary care

As well as the factors identified in Table 19, the systematic review highlighted the importance of factors such as age, morale and satisfaction in influencing decisions to leave primary care. The significant association of these factors with intention to leave primary care in the next five years is presented in Table 20.

Length of time working in primary care was associated with staying: only 16% of those who had worked in the field for over 10 years indicated their intention to leave compared with 31% of those who had worked for less than 10 years. This may, of course, be related to age, as older respondents were also less likely to be intending to leave (Table 20).

More important factors appeared to be participants' job-related morale and satisfaction. Participants reporting low morale were far more likely to report intending to leave primary care (low morale: 67% intend to leave vs 33% do not). Conversely, only 9% of those reporting high morale intended to leave. Changes in morale over the past two years were also important. A significantly higher number of participants reporting increased or similar morale in the last two years would like to continue working as GPs; however, more than half of those with decreased morale indicated their intention to leave (Table 20).

A similar pattern was found for job satisfaction. Of those reporting current dissatisfaction, 48% intended to leave in the next five years, although the remaining 52% reporting dissatisfaction did not. However, only 10% of those reporting satisfaction with their job intended to leave primary care. There was also a highly significant relationship between level of job satisfaction in the last two years and intentions to leave primary care. Less than 20% of those whose job satisfaction had increased or stayed the same intended to leave primary care, whereas 54% whose job satisfaction has decreased intended to leave (Table 20).

Structural or systemic factors associated with an intention to leave primary care were volume and intensity of workload; too much time spent on unimportant tasks; poor job flexibility; and the possible introduction of a 7-day working week (Table 20). Being able to have a career outside primary care was also significantly associated with the intention to leave. The association between health district and intention to leave almost reach statistical significance.

Table 20 Association of Intending to Leave Primary Care for An Alternative Career in the Next Five years with Work-Related and Demographic Factors

	Intending to Leave for alternative career				Pearson Chi-Square & P Value
	Yes		No		
	N	%	N	%	
Duration of working in FM/PC					Chi-Square= 5.558
10 years or less	30	30.6	68	69.4	**P= 0.018**
More than 10 years	15	16.1	78	83.9	
Current level of morale					Chi-Square= 19.478
Low	10	66.7	5	33.3	**P= 0.000058**
Neutral	18	26.9	49	73.1	
High	17	8.9	91	84.3	
Level of morale in last 2 years					Chi-Square= 14.129
Increased	18	22.8	61	77.2	**P= 0.001**
Remained the same	15	16.7	75	83.3	
Decreased	12	54.5	10	45.5	
Current level of satisfaction					Chi-Square= 19.325
Dissatisfied	11	47.8	12	52.2	**P= 0.00006**
Neutral	25	31.6	54	68.4	
Satisfied	9	10.1	80	89.9	
Level of satisfaction in last 2 years					Chi-Square= 26.331
Increased	8	16.7	40	83.3	**P= 0.0000**
Remained the same	15	14.7	87	85.3	
Decreased	22	53.7	19	46.3	
Volume of workload as factor to leave FM/PC					Chi-Square= 6.501
Not important	3	8.3	33	91.7	**P= 0.039**
Neutral	11	32.4	23	67.6	
Important	29	26.4	81	73.6	
Intensity of workload as factor to leave FM/PC					Chi-Square= 7.499
Not important	2	6.3	30	93.8	**P= 0.024**
Neutral	12	33.3	24	66.7	
Important	27	26	77	74	
Too much time spent on unimportant tasks as factor to leave FM/PC	4	11.4	31	88.6	Chi-Square= 10.565 **P= 0.005**
Not important	5	15.2	28	84.8	
Neutral	36	35.6	65	64.4	
Important					
Poor flexibility of hours as factor to leave FM/PC					Chi-Square= 7.952
Not important	2	6.7	28	93.3	**P= 0.019**
Neutral	11	23.4	36	76.6	
Important	27	32.5	56	67.5	
Introducing 7 days a week working as factor to leave FM/PC					Chi-Square= 9.647
Not important	0	0	20	100	**P= 0.008**
Neutral	6	17.1	29	82.9	
Important	35	30.2	81	69.8	
Starting a career outside FM/PC as factor to leave FM/PC					Chi-Square= 14.340
Not important	10	12.8	68	87.2	**P= 0.001**
Neutral	9	26.5	25	73.5	
Important	25	41	36	59	

Reduced workload volume as factor to stay in FM/PC					Chi-Square= 6.764
Not important	1	4.8	20	95.2	**P= 0.034**
Neutral	5	16.1	26	83.9	
Important	38	28.4	96	71.6	
Reduced workload intensity as factor to stay in FM/PC					Chi-Square= 7.855
Not important	1	4.3	22	95.7	**P= 0.02**
Neutral	4	14.3	24	85.7	
Important	37	28.5	93	71.5	
Shorter clinic opening times as factor to stay in FM/PC					Chi-Square= 8.033
Not important	2	7.4	25	92.6	P= **0.018**
Neutral	6	16.7	30	83.3	
Important	35	31	78	69	
Less administration as factor to stay in FM/PC					Chi-Square= 12.135
Not important	9	17.6	42	82.4	P= **0.002**
Neutral	4	10	36	90	
Important	29	36.7	50	63.3	
Health district					Chi-Square= 9.449
A	8	20.5	31	79.5	**P= 0.051**
B	16	41	23	59	
C	7	21.9	25	78.1	
D	7	17.9	32	82.1	
E	6	14.6	35	85.4	
Age					Chi-Square= 13.452
25 - 34	12	33.3	24	66.7	**P= 0.009**
35 - 44	23	32.9	47	67.1	
45 - 54	6	16.2	31	83.8	
55 - 64	3	8.1	34	91.9	
65 and above	0	0	7	100	

Note: N = Number, % = Percentage, FM= Family medicine, PC = Primary Care

4.7.2. Number of planned working years as a primary care doctor:

As stated earlier, a secondary outcome of interest was the number of years participants planned to work in primary care dichotomised into 5 years or less and more than 5 years. Table 21 presents those factors significantly associated with number of planned working years. Perhaps unsurprisingly, a significant association was found with age, with most of those aged 65 and above planning to work for less than five years, and the majority of those aged 35-44 planning to stay in the field for more than five years. Participants' qualifications were also important, with a higher number of those with family medicine or primary care qualifications planning to work for more than five years.

A significant association was found with the current level of satisfaction. Those more satisfied participants were planning to stay in their jobs for more than five years, whereas the majority of dissatisfied participants intended to work in primary care for less than five years.

A highly significant association was found with the level of satisfaction in the last two years, in which a higher number of participants indicating an increased or stable level of satisfaction were planning to stay in their job for more than five years.

Structural and systemic issues also featured, with both health district and the population covered by their centre associated with number of planned working years. The majority of those planning to work for less than five years were working in D or B health district while those planning to work for more than five years were mainly from the A and E Health Districts. Also, significantly more participants who stated that they do not know the population covered by their centre were planning to work for less than five years, while participants working in centres covering up to 25,000 patients were planning to work for more than five years. The results of the chi-square tests with all of the factors are available in Appendix 15.

Table 21 Association of Number of Planned Working Years as A Primary Care Doctor with Work-Related and Demographic Factors

	Number of planned working years as FM				Pearson Chi-Square & P Value
	Less than 5 years		More than 5 years		
	N	%	N	%	
Age					Chi-Square=14.392
25 - 34	10	27.8	26	72.2	**P= 0.006**
35 - 44	15	22.1	53	77.9	
45 - 54	11	30.6	25	69.4	
55 - 64	15	41.7	21	58.3	
65 and above	6	85.7	1	14.3	
Qualification					Chi-Square= 18.714
Kuwaiti board of FM	3	14.3	18	85.7	**P= 0.002**
First part of FM board, MSc FM, or other FM/PC qualification	2	8.3	15	91.7	
Other MSc qualification	15	50	22	50	
Diploma	11	33.3	15	66.7	
Medical degree	14	32.6	29	67.4	
Other	6	66.7	3	33.3	
Current level of satisfaction					Chi-Square= 10.209
Dissatisfied	13	59.1	9	40.9	**P= 0.006**
Neutral	24	31.2	53	68.8	
Satisfied	21	23.9	67	76.1	
Level of satisfaction in last 2 years					Chi-Square= 15.778
Increased	5	10.6	42	89.4	**P= 0.0000**
Remained the same	34	33.3	68	66.7	
Decreased	19	50	19	50	
Health district					Chi-Square=14.771
A	9	23.1	30	76.9	**P= 0.005**
B	15	38.5	24	61.5	
C	5	16.1	26	83.9	
D	20	52.6	18	47.4	
E	9	23.1	30	76.9	
Population covered by the centre					Chi-Square=20.959
Don not know	15	55.6	12	44.4	**P= 0.000**
Up to 25000	4	8.2	45	91.8	
25001-50000	9	32.1	19	67.9	
50001 and above	9	37.5	15	62.5	

Note: N = Number, % = Percentage, FM = Family medicine, PC = Primary Care

4.7.3. Retirement as a career plan:

Only three factors were significantly associated with the intention of retirement. Number of years working as a primary care doctor was important. While only 4.1% of those who had worked for less than 10 years in primary care intended to retire within 5 years, this increased to 14.4% in those working for more than 10 years in the field (Chi-Square= 6.125, P-Value= 0.013), Appendix 16. Position was also important, with one-third of those at Consultant grade saying they intend to retire within 5 years (Chi-Square= 16.560, P-Value= 0.002). There was also a significant association with ill health as a factor to leave primary care, wherein a higher

proportion of those not willing to retire stated that it ill health was an important factor to leave primary care (Chi-Square= 7.485, P-Value= 0.024).

4.7.4. Logistic regression analysis:

Binomial logistic regression was used to investigate the relationship between the previously mentioned primary and secondary outcomes and the factors associated with each, controlling for age, gender, nationality, and the health district. This step was taken to remove any effect of these factors on the results.

4.7.4.1. Leaving general practice for alternative career:

To avoid multicollinearity, six models were run to examine the association of several factors, including morale and satisfaction, with the intention to leave primary care. Appendix (17) shows the details of each model. The first model included the current level of satisfaction and workload intensity with other work-related factors, age, gender, nationality, and the health district. In this model, being dissatisfied (Odds ratio=28.26, P value=0.001, confidence interval=3.268 – 220.11) and having no strong opinion about workload intensity (Odds ratio=21.778, P value=0.006, confidence interval= 2.389 – 198.515) were associated with an increased chance of leaving primary care. However, having no strong opinion about the time spent on unimportant tasks had a protective effect from leaving primary care (Odds ratio =0.021, P value=0.007, confidence interval= 0.001 – 0.342). This model had a Nagelkerke R square value of 0.597, which demonstrates the percentage of variability explained by the variables included in the model, model details in Table (22).

Table 22 Binary Logistic Regression Results – Leaving Primary Care First Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	0.030	0.054	0.304	1	0.581	1.030	0.927	1.146
Health district			8.193	4	0.085			
Health district - A	-0.934	1.051	0.789	1	0.374	0.393	0.050	3.086
Health district - B	1.096	1.009	1.178	1	0.278	2.992	0.414	21.638
Health district - C	-0.719	1.072	0.450	1	0.503	0.487	0.060	3.982
Health district - D	-1.901	1.164	2.668	1	0.102	0.149	0.015	1.463
Kuwaiti Nationality	-0.451	0.893	0.255	1	0.614	0.637	0.111	3.668
Male Gender	-0.608	0.809	0.565	1	0.452	0.544	0.111	2.659
Too much time spent on unimportant tasks			7.846	2	0.020			
Too much time spent on unimportant tasks – not important	-1.942	1.260	2.374	1	0.123	0.143	0.012	1.696
Too much time spent on unimportant tasks – neutral	**-3.875**	**1.430**	**7.348**	**1**	**0.007**	**0.021**	**0.001**	**0.342**
Poor flexibility of hours			1.749	2	0.417			
Poor flexibility of hours – not important	-1.808	1.529	1.398	1	0.237	0.164	0.008	3.283
Poor flexibility of hours – neutral	-0.971	1.028	0.892	1	0.345	0.379	0.050	2.841
Potential introduction of 7 days a week working			0.004	2	0.998			
Potential introduction of 7 days a week working – not important	-19.721	8728.581	0.000	1	0.998	0.000	0.000	
Potential introduction of 7 days a week working – neutral	-0.069	1.094	0.004	1	0.950	0.933	0.109	7.966
Shorter clinic opening times			1.821	2	0.402			
Shorter clinic opening times – not important	-2.466	1.939	1.617	1	0.204	0.085	0.002	3.798
Shorter clinic opening times – neutral	-0.948	1.159	0.669	1	0.414	0.388	0.040	3.760
Less administration			5.164	2	0.076			
Less administration – not important	1.710	1.110	2.372	1	0.123	5.529	0.628	48.713
Less administration – neutral	-2.258	1.483	2.320	1	0.128	0.105	0.006	1.911
Duration of working as family physician/primary care doctor – 10 years or less	0.252	1.057	0.057	1	0.811	1.287	0.162	10.223
Current level of satisfaction			11.442	2	0.003			
Current level of satisfaction – Dissatisfied	**3.341**	**1.047**	**10.179**	**1**	**0.001**	**28.260**	**3.628**	**220.110**
Current level of satisfaction – neutral	-0.303	0.737	0.169	1	0.681	0.739	0.174	3.133
Intensity of workload			7.521	2	0.023			
Intensity of workload – not important	0.668	1.196	0.312	1	0.576	1.951	0.187	20.322
Intensity of workload – neutral	**3.081**	**1.128**	**7.466**	**1**	**0.006**	**21.778**	**2.389**	**198.515**
Constant	-1.081	3.045	0.126	1	0.722	0.339		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, morale levels are compared to high level, duration of working is compared to more than 10 years, other factors are compared to important rating, Significant results in bold

The impact of change in satisfaction in the last two years was also investigated. In this model, not having a strong opinion about the time spent on unimportant tasks (Odds ratio= 0.036, P value= 0.02, confidence interval= 0.002 – 0.597) and about less administration (Odds ratio= 0.021, P value= 0.015, confidence interval= 0.001 – 0.479) were associated with a lower chance of leaving primary care in the next five years. Experiencing a stable (Odds ratio= 0.013, P value= 0.0000, confidence interval= 0.001 – 0.129) or increased level of satisfaction in the last two years (Odds ratio= 0.096, P value= 0.02, confidence interval= 0.013 – 0.690) were also associated with a lower chance of leaving primary care. In the same model, having no strong opinion about the intensity of workload (Odds ratio= 31.763, P value= 0.005, confidence interval= 2.786 – 362.060) and working for more than ten years in primary care (Odds ratio=17.963, P value= 0.033, confidence interval= 1.262 – 255.705) were associated with the intention to leave primary care. This model had a Nagelkerke R square value of 0.649, Appendix (18).

The association between satisfaction level in the last two years and work volume was also measured. This model showed that not having a strong opinion about the effect of less administration (Odds ratio= 0.089, P value= 0.045, confidence interval= 0.008 – 0.951), having a stable (Odds ratio= 0.036, P value= 0.0000, confidence interval= 0.006 – 0.212), or increased level of satisfaction in the last two years (Odds ratio= 0.138, P value=0.029, confidence interval= 0.023 – 0.819) were associated with a lower intention to leave primary care. However, having no strong opinion about workload volume (Odds ratio=7.737, P value= 0.037, confidence interval= 1.132 – 52.873) increased the intention to leave primary care. This model had a Nagelkerke R square value of 0.581, Appendix (19).

A model that investigated morale level in the last two years and workload intensity was also generated. In this model, stable (Odds ratio= 0.110, P value= 0.013, confidence interval= 0.019 – 0.633) and increased morale in the last two years (Odds ratio =0.164, P value=0.044, confidence interval= 0.028 – 0.958) reduced the likelihood of leaving primary care. Having no strong opinion about the time spent on unimportant tasks (Odds ratio= 0.077, P value= 0.043, confidence interval= 0.006 – 0.923) was also protective from leaving primary care. However, not having a strong opinion about the workload intensity (Odds ratio= 8.826, P value= 0.028, confidence interval= 1.269 – 61.406) was associated with an increase in intention to leave. This model had a Nagelkerke R square value of 0.532, Appendix (20).

Two models investigated the effect of reducing workload volume or intensity and current morale on the intention of leaving primary care. In the first model, which included workload volume, low morale level (Odds ratio= 50.627, P value= 0.000, confidence interval= 5.871 – 436.586) increased the probability of leaving

primary care; and the model had a Nagelkerke R square value of 0.523, Appendix (21). The other model that included work intensity also showed that low morale increased the likelihood of leaving (Odds ratio= 50.181, P value= 0.000, confidence interval= 5.857 – 428.645). This model had a Nagelkerke R square value of 0.533, Appendix (22).

4.7.4.2. Number of planned working years in primary care:

As described above (Table 21), six factors were significantly associated with the number of planned working years left in primary care. Two models were created to avoid multicollinearity. In addition to the age, gender, nationality and health district, the population covered by the centre, qualification, and the current level of satisfaction were included. Five significant associations were found: increase in age (Odds ratio= 1.095, P value= 0.004, confidence interval= 1.029 – 1.164), being a Kuwaiti (Odds ratio= 13.904, P value= 0.01, confidence interval= 1.866 – 103.623), and dissatisfaction (Odds ratio= 25.521, P value= 0.003, confidence interval= 3.038 – 214.370) were associated with planning to work for less than five years in primary care. Working in a centre covering a population of less than 25,000 (Odds ratio= 0.079, P value= 0.039, confidence interval= 0.007– 0.875), having a qualification from the KBFM (Odds ratio= 0.017, P value= 0.027, confidence interval= 0.00000 – 0.633), or other family medicine or primary care qualification (Odds ratio= 0.007, P value= 0.003, confidence interval= 0.0000 – 0.190), was inversely associated with plans to work less than 5 years in primary care (Appendix 20). This model had a Nagelkerke R square value of 0.541.

In the second model, current satisfaction was replaced with satisfaction levels in the last two years. In this, age (Odds ratio=1.142, P value=0.002, confidence interval= 1.052– 1.240) working in District D (Odds ratio=11.881, P value= 0.044, confidence interval= 1.074 – 131.434), and being a Kuwaiti (Odds ratio= 15.997, P value=0.012, confidence interval= 1.828 – 140.008) were associated with planning to work for less than five years in primary care. Again, having a qualification from the KBFM (Odds ratio= 0.004, P value= 0.01, confidence interval= 0.000 – 0.260) or other family medicine or primary care qualification (Odds ratio=0.005, P value= 0.003, confidence interval= 0.000 – 0.167) was inversely associated with the intention of working in primary care for less than five years. Increased (Odds ratio= 0.009, P value= 0.02, confidence interval= 0.001 – 0.170) or unchanging (Odds ratio= 0.019, P value= 0.01, confidence interval= 0.002 – 0.195) levels of satisfaction in the last two years were also inversely associated with the intention of working in primary care for less than five year, (Appendix 21). This model had a Nagelkerke R square value of 0.6.

4.7.4.3. Retirement:

Regarding retirement, one model was created that included the aforementioned controlling factors, along with ill health, and the duration of working as a primary care doctor. The model resulted in one significant association, in which those who rated ill-health as not important had a higher likelihood of retiring in the next five years (Odds ratio= 4.864, P value= 0.025, confidence interval= 1.22 – 19.389), (Appendix 22). However, this model had a low Nagelkerke R square value of 0.237.

4.8. Open-ended questions results and analysis:

The survey instrument had ten open-ended questions. Some questions also provided opportunity to add other comments. Table 23 demonstrates the number of answers for each question.

Table 23 Number of Open-Ended Questions Answered

Question Number	Number of participants answered	Not applicable or not answered
Question 2 – Describe other roles	11	180
Question 8 – Other reasons for reduction in working hours	1	190
Question 9 – Other reasons for the increase in working hours	18	173
Question 16 – Commenting on morale level in last 2 years	48	143
Question 18 – Commenting on satisfaction level in last 2 years	34	157
Question 21 – Commenting on five years career plans	31	160
Question 23 – Other factors influencing the decision to leave or retire from primary care	4	187
Question 24 – Other factors influencing the decision to stay in primary care	5	186
Question 25 – Explaining the greatest problem in primary care	154	37
Question 26 – Explaining the interventions needed in primary care	133	58

4.8.1. Participant views on the greatest problem in primary care (Question twenty-five):

In this question, the participants were asked about what, in their opinion, was the greatest problem in primary care in Kuwait. The greatest number of free-text comments related to workplace issues; patient demands and relationships were also frequently mentioned.

- Values and health:

One participant criticised the unfair distribution of workload (*values*), three mentioned the lack of rest, one cited exhaustion, and one participant highlighted the issue of stress (*health*).

- World of knowledge and interests:

One criticised the knowledge level of some doctors, while another felt that the expectation that GPs needed to know everything was problematic (*world of knowledge*). Regarding interests, two commenters criticised the lack opportunity to develop GPs with special *interests*.

> *".....no specialist interests for GP (like GP with special interests for dermatology, psychiatry)"* (Participant 70, Kuwaiti Male, 32)

- Other individual factors:

Multiple comments here focused on the lack of respect or underestimation of GPs and the sense of inferiority in comparison to other specialities (*respect, prestige, and recognition*). One mentioned the reduced *autonomy*, and another cited the lack of support for self-development (*Career advancement and development*).

> *"The lack of respect for a GP because of a general perception the GPs aren't important"* (Participant 92, non-Kuwaiti Female, 35)

- Workplace:

More than seventy-five comments mentioned the *workload* or the increase in patient numbers as a problem in primary care, and some commented specifically on the increase in the *administrative workload*. *Working hours* were also raised as one of the problems in primary care, with the majority of them mentioning on-call duties. Several participants highlighted the lack of time spent with patients, and three mentioned the lack of communication with hospitals.

> *"Night duties, working in holidays"* (Participant 72, non-Kuwaiti Female, 59)

> *"No contact with hospitals through net connection nor feedback referrals, we can't refer directly for ultrasound or mammograms, many referrals to medical OPD rejected even they are fulfilling protocols of referrals"* (Participant 14, Kuwaiti Female, 45)

Twenty-nine comments were related to *rules and regulations* of the workplace, of which twelve criticised walk-in clinics and the absence of an appointment system. Others complained about the lack of a follow-up system or patients not being assigned to a specific doctor. Six participants cited the lack of clear job description, and five mentioned that the family medicine system or primary care was not properly applied in Kuwait. Other

comments cited problems related to the overall system and management, the current computer system, lack of resources, the lack of clear policies and the continuous changing of the rules.

> *"No appointment system, no job description, policy & rules keep changing"* (Participant 186, Kuwaiti Female, 35)

Patients' demands and relationships were also mentioned, in which the majority of such comments criticised the behaviour of patients seeking sick leave approvals, and requests for investigations or medications by patients. Other comments mentioned the language barrier with some patients and patient non-compliance. Seven comments were related to the *income or salary and* were about low payment for doctors.

> *"Recurrent doctor visit without indication for sick leaves and non-indicated lab…."* (Participant 87, non-Kuwaiti Female, 36)

- Educational institutes and peers:

The majority of these comments related to the educational institutes, highlighting the lack of *CPD* activities. Other comments mentioned the lack of time for personal and educational development, and inadequate training (*CPD*). A few comments were related to *peers*, in which one mentioned the low level of education of some doctors and two cited the lack of teamwork environment with other departments.

> *"No additional workshops for updated guidelines in GP or training equally to all staff / limited to BLS & ALS numbers of participants"* (Participant 63, non-Kuwaiti Female, 36)

- Professional networks and media:

Comments related to the *community groups* concentrated on the lack of health awareness of the community and lack of trust in the healthcare system. Regarding the *media*, one comment referred to the lack of publicity about the role of family medicine or primary care and the other mentioned the media as a source of medical information for patients.

> *"..Google based, Diwaniya based information to patients…"* (Participant 37, Kuwaiti Female, 40)

- Political decisions:

Some participants highlighted the lack of legal support for physicians against abuse or any other problems. Others cited the absence of vision and policies to support family medicine, and others recommended providing additional resource.

> *"The greatest of them all is the PHC in Kuwait is not mainly given as a medical service, it's a political service to satisfy voters"* (Participant 150, non-Kuwaiti Male, 38)

- Employment Market:

Around nineteen comments were related to the *employment market*, and all of them mentioned the lack of staff as one of primary care's main problems.

> *"Shortage of family doctors or GP doctors in PHC"* (Participant 66, Kuwaiti Female, 29)

4.8.2. Participant views on the interventions needed in primary care (Question twenty-six):

This question explored participants suggestions of interventions that could improve the primary care system in Kuwait. Comments focused particularly on workplace and on education.

- World of knowledge, interests, and skills:

Three comments emphasised providing doctors with the latest medical guidelines (*world of knowledge*). Encouraging or establishing GPs with special interests was the main focus of most of the comments related to interests, with only one participant recommending that doctors should be pure clinicians.

- Values, health, and other individual factors:

Most of the comments recommended establishing policies that focus on doctors' *respect* and reduction of abuse from patients, and one *value*-related comment was about the unfair distribution of workload. Two comments were related to the participants' *health*, in which one recommended providing a room for physicians to rest in and the other to increase the official break time.

- Workplace:

Twenty-three comments suggested establishing an appointment system, allocating specific time for each patient visit, and increasing the time of clinical consultations (*rules and regulations*). Several participants recommended regulating the procedure of writing sick notes and establishing a clear job description for doctors

(*rules and regulations*). Other recommendations focused on establishing a hierarchy system for doctors, i.e. a more defined career path, a triage system conducted by nurses, limiting night visits to emergency cases, adopting accreditation program recommendations, improving administrative support, implementing a reward system for doctors, and applying the full system of family medicine or primary care (*rules and regulations*).

> *"Appointments, standard timing spent with patient"* (Participant 167, non-Kuwaiti Male, 36)

> *"Organize sick leave strictly"* (Participant 50, non-Kuwaiti Female, 37)

Participants also recommended reducing *working hours* and night duties or cancelling night duties completely. Comments also concentrated on reducing *workload*, wherein most participants suggested decreasing patient numbers, distributing the workload between doctors evenly, and decreasing *administrative workload*. Suggestions related to *structural issues* included increasing primary care clinics, updating the electronic systems, and providing access to specific investigations. Recommendations also included increasing *communication with hospitals* and improving the *work environment*. In terms of *income or salary*, most of the comments suggested increasing the salaries of doctors and introducing incentive payments.

> *"… less duties (make them optional) with more payment in holidays (like Eid, ..), less working hours, polyclinic shouldn't open 24 hours"* (Participant 103, non-Kuwaiti Female, 35)

> *"Data computer system needs more update and speed, a backup system must be at hand when main ministry system is down"* (Participant 8, Kuwaiti Female, 55)

- Educational institutes:

Approximately twenty-six comments recommended increasing opportunities for *CPD* activities, such as workshops, lectures, conferences, and hospital attachments. Other participants recommended opening the door for doctors to continue *postgraduate education*, especially non-Kuwaitis.

> *"More educational lectures and certificate for non-Kuwaiti doctors"* (Participant 13, non-Kuwaiti Female, 33)

- Professional networks and peers:

The majority of comments related to *community groups* recommended raising the health education and awareness of the community. Two commenters suggested enhancing or establishing the concept of multidisciplinary teams in primary care (*peers*).

- Political decisions:

The majority of comments focused on increasing clinic numbers, increasing the legal and administrative support for doctors, and establishing policies that control or govern sick leave. Other suggestions included establishing a health insurance system, introducing fees for patients visits, involving family physicians in decision making, and appointing managers with a clinical background.

> *"To revive health policy according to unnecessary sick leaves, legal administration support"* (Participant 168, non-Kuwaiti Male, 44)

- Employment market:

Almost all of the comments related to the *employment market* suggested increasing the number of staff.

5. Discussion:

In terms of sample representation, most participants mentioned that their centres work for more than 17 hours, which is similar to that mentioned in the Central Directorate of Primary Care (2016). Although most of the participants said that their centre covered a population of up to 25000, the Central Directorate of Primary Care (2016) showed that only the centres in Area A cover an average of 25000 of the population. However, 21% of participants did not know the size of the population covered in their centres and it may be that other respondents were not as clear about the catchment size of their centre. In terms of demographics, more than 60% of the sample were non-Kuwait doctors, which matches the demographics of doctors in K-MOH data (Central Statistical Bureau, 2018b). However, due to the lack of routinely collected data, the survey response data could not be compared to the demographics of the whole population of doctors working in Kuwaiti primary care.

The findings from the questionnaire survey broadly agree, and reinforce, the findings from the international literature in the systematic review. Low morale, job dissatisfaction, workload, and working for more than ten years in primary care were associated with an increased intention to leave primary care. Other factors were found which may support primary care doctors to stay: increased or stable job satisfaction, having a

qualification in family medicine or primary care, and not having a strong opinion about time spent on unimportant tasks or less administrative tasks. However, there were large confidence intervals around the estimated effect sizes, which can be explained by the small sample size.

Job satisfaction was also associated with intention to leave, with dissatisfaction associated with the intention to leave; conversely, increased or stable satisfaction in the last two years was associated with a reduced intention to leave. Morale also had an effect on the decision to leave primary care. Current low morale was associated with the intention to leave primary care, while stable or increased morale in the last two years was inversely related to the intention to leave primary care. Again, these results demonstrating the impact of satisfaction and morale on primary care doctors' career intentions were in agreement with the results of the systematic review.

Workload was also an important factor in influencing intentions to leave, again confirming that international findings are also applicable in Kuwait. Rating too much time spent on unimportant tasks as neutral was inversely related with leaving primary care, suggesting that doctors who do not mind spending their time on non-clinical work may be more likely to stay in primary care. Results also indicated that doctors who do not have problem with administrative tasks were more likely to intend to stay in primary care.

When asked about how long they planned to work in primary care, older age and being a Kuwaiti national were associated with the intention of working for less than five years, which is unexpected and contrary to the evidence found in the systematic review, especially regarding Kuwaiti nationals. Such results might be explained by the reduced autonomy and the feeling of not practising an ideal model of primary care, as mentioned in the open-ended questions. However, holding primary care qualifications had a protective effect against the intention to work for less than five years. Dissatisfaction was also an important factor here, increasing the likelihood of not working long term in primary care. Size of catchment area population and Health District also had some influence on intentions to remain in primary care, confirming the importance of geographical location as identified in the review.

The unexpected result of rating ill health as not important and its association with retirement in the coming five years in the retirement intention regression model was unexpected and contrary to the evidence in the systematic review. While the reasons for this were not clear, one explanation might be the small number of participants in the sample actually planning to retire (17, 8.9%).

6. Strengths and limitations:

This is the first such survey of primary care doctors in Kuwait. With a high response rate and good completion of the questionnaire, this shows that such work can be conducted in Kuwait and generate meaningful results on which to base policy recommendations. The survey was also able to include Kuwaitis and non-Kuwaitis, reflecting the current workforce. The percentage of Kuwaiti and non-Kuwaiti participants matched the latest report, which indicated that non-Kuwaiti doctors were approximately 60% of the workforce (Mossialos *et al.*, 2018). However, there were more female doctors in the study population, which is the opposite of doctors in the K-MOH in which the majority of the workforce was male 63%, (Kuwait Central Statistical Bureau, 2015). However, these data are for all of the doctors in the K-MOH; primary care could be different as it is known that, internationally, primary care often has more female doctors.

This study had some limitations that were encountered during the distribution and analysis of the surveys. Although the survey instrument was adapted to the Kuwaiti system and piloted on five primary care doctors working in Kuwait, some participants had difficulties in understanding some questions and it was not piloted with non-Kuwaiti doctors. Despite the high response rate, the distribution of the survey during the summer might have reduced the number of participants because several doctors were on leave. Although the response rate was approximately 81%, the small sample size affected the final results, contributing to the wide confidence intervals in the regression models. The lack of reliable data about the characteristics of the primary care workforce in Kuwait made it challenging to compare the results of this study to the current situation in Kuwait.

7. Summary:

This chapter discussed the quantitative study done as part of this PhD project, through the distribution of a survey instrument to doctors working in the primary care services in Kuwait. Results showed that around a quarter of the doctors are planning to leave their jobs in the coming five years, and a third are planning to work for less than five years. The regression analysis showed that morale, satisfaction, and workload were the most common factors to influence doctors' decisions to leave primary care or to work for less than five years, which is consistent with the evidence in the literature and the systematic review done in this project. Also, problems related to respect, abuse, and sense of inferiority were raised in the open-ended questions. These issues were explored in greater depth in the qualitative study.

Chapter Seven: Qualitative Interview Study

1. Introduction:

This chapter will present the third study in this PhD, a qualitative interview study conducted with primary care doctors in Kuwait to fulfil the third objective, to explore motivators for leaving primary care clinical practice. The chapter will discuss in detail the methodology, results, and analysis of this qualitative study. At the end, a summary will be presented, and the strengths and limitations of this study will be discussed.

2. Design and settings:

This was a qualitative study conducted using semi-structured interviews with doctors working in Kuwait primary care centres. This section will discuss the population studied, recruitment and selection criteria, development of the interview topic guide, and ethical approvals.

2.1. Study population, recruitment, and selection criteria:

As in the quantitative study, this study included medical doctors working in the primary care centres, with no limitations to their age, nationality, or qualification. However, doctors working in specialised clinics and those currently in the primary care training program were excluded. As a recruitment strategy, the survey instrument, Appendix 13, used in the quantitative study included a question asking doctors if they would like to participate in the qualitative study. Survey responders who indicated their desire to participate in the qualitative study were contacted by phone or email depending on the information provided in the survey. The date, time, and location were specified by the participants according to their schedule, which was usually before or after their shift in the clinic.

Out of the 57 participants from the quantitative study who provided their contacts to participate in the qualitative phase, 17 did not reply to the invitation, eight refused to participate, three could not be reached (email or text message not delivered), two were on leave, two joined the postgraduate training program, one resigned, and one transferred to another centre. Purposive sampling was then used to select participants equally according to their gender, nationality, and health districts, which was the reason to exclude three female Kuwaiti participants from a centre where two female Kuwaitis were interviewed, as it was felt that the sample – and the data generated – were unlikely to be enhanced by including more Kuwaiti female doctors from the same health district. This ensured that a range of people with characteristics thought to be important to the overall study were sampled and included. The response from the survey shows the difficulties faced in the recruitment process with less than 30% of the survey participants providing their contact details for interview

follow-up. Despite assurances, participants who refused to be involved may have had ongoing concerns about that their managers or someone in K-MOH knowing about their responses in the interviews or were not familiar with qualitative research methods.

Overall, the aim of generating a purposive sample, which included males and females, Kuwaiti and non-Kuwaitis and sampled across age and health districts, was felt to be broadly achieved. In addition, while there is no objective data to prove this, it is likely that my presence in the primary care centres during the quantitative study, to deliver and collect questionnaires, may have helped to build a degree of trust in the study and in my role as a researcher.

2.2. Development of the interview topic guide:

An interview guide, Appendix 26, was developed based on the findings of the systematic review and the factors covered in the STF. The guide explored the factors that might affect career decisions in general and focusing on those affecting primary care retention. Before each interview, participants were sent a list of the broad areas to be discussed to prepare them for the interview as most of them were not familiar with or had not participated in research using qualitative interviews.

2.3. Ethical approvals and consent forms:

As explained earlier, ethical approvals were granted by both the University of Glasgow and K-MOH after submitting a detailed proposal for the whole PhD project, including the qualitative study, Appendices 1, 2, and 3. At the start of each interview, the participants received participant information sheets and consent forms. The aim of the research was explained to them, including their right to withdraw at any time, and their consent to record the interview was obtained. A copy of the consent form for the qualitative study and the participants information sheet are available in Appendices 5 and 6.

2.4. Data collection and transcription:

Interviews were conducted between January and April 2019. Interviews were usually conducted in their place of work and lasted 40 to 60 minutes. Interview recordings were transcribed by professional transcribers and reviewed by AA to ensure the accuracy of the transcription, in which missing or inaudible parts were completed if possible. Interviews were also anonymised and was also reviewed by one of the supervisors. After transcription audiotapes were deleted to ensure the participants' anonymity and privacy.

2.5. Analysis:

2.5.1. Background and rationale:

The analysis was conducted using thematic analysis, informed by the Framework Approach. According to Braun and Clarke (2006), thematic analysis can be considered the base or the foundation of analysis for qualitative data, which they define as *"a method for identifying, analysing and reporting patterns (themes) within data"* (p.79). The advantages of using thematic analysis are: flexibility; theoretical freedom; the ability to summarise a large amount of data; identification of similarities and differences across the data; the ability to provide a rich and detailed account of the data; and the ability to help in informing policymakers.

Thematic analysis may have certain disadvantages such as the failure to truly analyse the data by using the interview questions as themes or citing the themes with explanations beyond the data content, and mismatches between the data and analytic claims (Braun and Clarke, 2006). However, such disadvantages may be considered as purely dependent on the researcher and his or her experience in using thematic analysis. This was tackled in this study through consultation with and the assistance of the supervisors.

The Framework Approach, which is described as a type of thematic analysis (Pope, Ziebland and Mays, 2000; Gale *et al.*, 2013), is *"a systematic process of sifting, charting and sorting material according to key issues and themes"* (Ritchie and Spencer, 2002, p.177). The Framework analysis has five connected stages: familiarization of interview content, identifying a thematic framework, indexing, charting, and mapping and interpretation, which are explained in Table 24.

Framework analysis has several advantages: it is based on and driven by the collected data; flexibility; comprehensiveness; facilitates retrieval of the original text and comparison across participant responses (Ritchie and Spencer, 2002). Framework analysis also has the advantage of being systematic (Lacey and Luff, 2001; Ritchie and Spencer, 2002; Gale *et al.*, 2013), and allows the emergence of concepts or inclusion of a prior hypothesis (Pope, Ziebland and Mays, 2000; Lacey and Luff, 2001; Srivastava and Thomson, 2009; Gale *et al.*, 2013)

Table 24 Steps of the Framework Analysis of Qualitative Data, Reproduced From (Ritchie and Spencer, 2002)

Familiarization	Knowing the data more by reading transcripts or listening to tapes, knowing the number of researchers involved, the used methods, and time and circumstances where that data was collected.
Identifying a thematic framework	The process of identifying the main themes in the data and establish a framework where the data can be sorted.
Indexing	The process of applying the established framework to the data in a textual form.
Charting	Building a picture of the whole data
Mapping and interpretation	Identifying the key characteristics of the data and interpret the data by defining concepts, establishing typologies, exploring associations, and providing explanations.

2.5.2. Process of analysis:

Initially, the transcripts were uploaded to NVivo.12 software to facilitate the process of coding and, later, data retrieval. The process of analysis was conducted according to the Framework Analysis approach. The transcripts were read thoroughly by AA to obtain a general idea of the content and to identify themes within the data. A sample of interviews were also read by the supervisors; joint discussions reviewed the themes and helped to develop interpretation of the data. The process of indexing was carried out while reading each of the interviews and emerging themes were documented regardless of their potential fit to the STF. This was followed by mapping the themes onto the STF, if applicable. Other emerging themes that could not be mapped to the STF were also identified. During this phase, discussions with supervisors and involving them in the development of the coding ensured that all the emerging themes were taken into consideration, regardless of if their fit to the STF. This was important for analytical rigour, to avoid shoehorning data into the theoretical framework and to avoid missing any data. The process of charting was conducted using mind maps, wherein mind maps were created for each level of the STF system and its components, Appendix 27. The process of interpretation was conducted after that by the researcher with the assistance of the analysis tools in NVivo.12 software. This step was conducted by using the available tools in NVivo.12 software, such as queries, matrix coding, and word counts. Throughout the analysis, both supervisors read interview transcripts and reviewed the coding framework and mind maps to ensure the process was rigorous and transparent.

As in the previous two studies, the analysis focused on comparing the participants according to gender, nationality, and age. Regarding age and gender, this decision was based on the evidence from the systematic review and the quantitative study indicating the importance of these characteristics. The comparison according to nationality was based on the size of the non-Kuwaiti doctors in the workforce, the different working

environments that both groups are working in, and the survey results that showed Kuwaitis are more likely to work for less than five years. The quantification of the participants' views used according to their age, gender, or nationality, was conducted to indicate the weight and importance of their views rather than as a measure of sample representation of the wider population o primary care doctors.

3. Results:

3.1. Demographic characteristics of interviewees:

The participants recruited were evenly divided by Kuwaiti and non-Kuwaiti nationality; there were eleven males and nine females. There was, however, a gender imbalance seen among Kuwaitis and non-Kuwaitis. The majority of Kuwaiti participants were females, and the majority of non-Kuwaitis were males. In terms of age, the majority of Kuwaiti interviewees, six, were in their thirties, and two were in their forties. Four Non-Kuwaitis were in their sixties, four in their thirties, and two were 45. The majority of interviewees were from districts A and E. Table 25 illustrates the details of interviewees demographics.

Table 25 Demographics of Interviewees

Participants' ID number	Age	Nationality	Gender	District
1	36	K	F	A
5	45	NK	F	A
16	36	K	M	A
22	43	K	M	A
24	29	K	F	A
25	37	K	F	A
37	39	NK	M	A
62	45	NK	M	B
65	51	K	M	B
80	34	K	F	C
99	63	NK	M	C
124	42	K	F	D
127	34	NK	F	D
150	39	NK	M	D
151	35	K	F	E
157	68	NK	M	E
162	30	NK	M	E
173	65	NK	M	E
187	65	NK	M	E
191	37	K	F	E

K=Kuwaiti, NK=Non-Kuwaiti, M=Male, F=Female

3.2. Analysis of data using STF:

This section will present the results of the interviews using the STF systems and components. The analysis focused on comparisons by gender, which was an important factor in the systematic review results. Participants' nationality was also compared due to its significance in the systematic review and some factors in the quantitative study.

3.3. Individual system of STF:

Patton and McMahon (2014) identified a number of factors which they assigned to the level of individuals as reviewed in Chapter (4). While many of these factors were identified in the data, others appeared to be less applicable to the interviews conducted here. For example, there was little or no discussion in relation to sexual orientation. Other factors appeared to be much more overlapping than the STF implies, for example, values and beliefs or self-concept.

3.3.1. Age:

Fourteen interviewees discussed age, out of whom eight were non-Kuwaitis, and eight were males. Age seemed to be a more important factor for non-Kuwaitis. Six non-Kuwaiti participants thought that age was an important factor in leaving or staying in primary care. By contrast, only three Kuwaitis talked about age as important, perhaps because they were a generally younger group. Two non-Kuwaiti participants talked about the possibility of increasing of health issues with age, and one felt that age limited a person's activity. Two felt that with age it was difficult to change to another speciality.

> *"Yes a lot of doctors here who are older than me actually they found now family medicine is the, working in the primary health care it's okay for them and for their family maybe because. Mainly as you said my age affect me but maybe like stability, you feel like stable in this position"* (Participant 127, non-Kuwaiti, Female, 34 years)

In terms of Kuwaiti participants, three thought it was not important, and three thought it was. For two, growing older led to family commitments which would limit their ability to change their career. One mentioned that it was difficult to change one's routine when getting older and another cited the reduced interest in reading and studying and the reduction in opportunities with age.

"Age is a problem, my family commitments. I'm tired. Okay. And I don't get active as before and I don't have the appetite to read, plus at this age all the doors are closing" (Participant 65, Kuwaiti, Male, 51 years)

Most of the males (six) mentioned that age was an essential factor in influencing their decision to leave or stay in primary care. Female participants were evenly divided in their views about the effect of age. Those who thought it had an effect discussed the need for stability with age, family responsibilities, and that primary care was more suitable for doctors when they get older.

"It's not about young but I mean at this years I need to focus on my family planning, that's why" (Participant 80, Kuwaiti, Female, 34 years)

3.3.2. Gender:

Gender and its potential effect on decisions to change their career was discussed by most participants. Only two, both Kuwaitis, thought that gender had played a role in their career decisions, choosing primary care to escape the night-on-calls and the difficult cases in the hospitals. Most, however, thought that gender did not have an effect and they mentioned the cultural misconception about primary care and how it is regarded as a female speciality. Such misconception was mainly linked to the perceived (in)ability of women to attend nights-on-call because of their family commitments, working hours, and the view that primary care was a less intense speciality that would suit females more. This view was held by both men and women.

"No I don't think it's true because family medicine I think better family medicine or the surgical field that even for our job I think we are dealing with the polyclinic, with the patient, not like the hospital with the wards, with the serious patients in the beds I think for the female it is better than the hospital. Yeah we don't have it because that's one of the reasons we shift for family medicine, escaping from 24 hour, especially for female" (Participant 191, Kuwaiti, Female, 37 years)

Among the nine non-Kuwaiti interviewees, three thought that choosing primary care was gender-related and specified family responsibilities, working hours and nights-on-call, work atmosphere, and the type of cases as factors for their choice of primary care.

"Yeah it [gender] *plays a role. Most of the female doctors they either go to gynaecology or family medicine. The male doctors however they can see them spread around every speciality. But the female doctors a lot of them choose family medicine. Probably because the work atmosphere, they love patient communication. They maybe, you deal less with the follow up cases. Instead of following up a patient for a long time in the hospital, the ward, or even the emergency when we see severely acute cases we don't see much of that in the polyclinic. So it's a better work atmosphere for a female doctor. Yeah probably, probably culture does because if they work in the hospital well for example if a woman is married and she had children as a doctor who works in the hospital she obviously has less time for her children than that who works in the polyclinic. So in the polyclinic it's the work, like its organised. Its much more organised than the hospital. There is no on-call, like 24 hours in the hospital"* (Participant 162, non-Kuwaiti, Male, 30 years)

Only one male interviewee thought that gender played a role in career selection or staying in primary care; the rest mentioned that such a misconception was influenced by the cultural view of the field. However, four out of the nine female interviewees thought that choosing primary care was influenced by gender due to family responsibilities, not having emergency cases, working hours, and not having nights-on-call.

"The family medicine is not like that but here in Kuwait you know it's easier for the female as the socially, so yes here the percentage of female I think more than 75. It's better, this is why I choose it even though I have a master's degree in paediatrics but I choose to work as a general practitioner because I don't want to spend too much of my time in the hospital. Maybe this is why I choose this one because I'm a female and I need to be with my kids for long time so this is why" (Participant 5, non-Kuwaiti, Female, 45 years)

3.3.3. Health:

Most interviewees discussed health in general, and its effect on doctors' retention; mental health was particularly mentioned. Health was raised by both the Kuwaiti and non-Kuwaiti participants and by both men and women. Among the non-Kuwaiti interviewees, most mentioned that their work affected their health, and one felt that some doctors left primary care because of health problems. Examples given by participants about health issues related to their job included the sedentary lifestyle, neck pain, and cardiovascular diseases. Half of the Kuwaiti interviewees also described how they suffered from health issues related to their jobs, and two also mentioned that some doctors left because of health problems. Male and female doctors had broadly similar

views on health. However, an additional issue raised by the female interviewees was dealing with health issues in the family, which could influence decisions to leave or think about leaving primary care.

> *"There is so many doctors who leave. They has some health problems, they can't accommodate and they want to go"* (Participant 157, non-Kuwaiti, Male, 68 years)

> *"I had a medical issue with one of my children. They didn't get me so we had a very big problem with that and it was like, shall I continue working or shall I think about my child's life. Shall I leave medicine and that was the plan. I would leave the medicine to go to seek medical help for my child"* (Participant 1, Kuwaiti, Female, 36 years)

Seven interviewees discussed mental health, of which five were males, and four were non-Kuwaitis. Some of the non-Kuwaitis referred to stress in relation to workload and their relationships with peers. They suggested the negative impact of work atmosphere on their mental health, and one thought his mental health affected his family commitments. Among the three Kuwaiti doctors, two related mental health issues to their work and one to the nature of primary care and their interest in hospital career. Male participants cited workload and work environment as causes of mental health issues. The two female participants, who were Kuwaiti, also mentioned mental health issues and linked them to the psychiatric cases seen and to the lack of interest in primary care work.

> *"My temper has changed I used to be more welcoming to the patients and more you know enthusiastic of going to duty. Now I'm just going to duty by push. Not having the passion. I think there is a bout of depression that comes in-between"* (Participant 150, non-Kuwaiti, Male, 39 years)

3.3.4. Interest in primary care:

Interest was one of the individual factors mentioned by almost all interviewees. Six Kuwaiti interviewees had been interested in other specialities before pursuing primary care as a career. Two were interested in primary care since medical school, and one after joining the training program. Out of the six, three were interested in surgical specialities and changed to primary care for either family or financial reasons. The rest of them drifted into primary care, in which one chose primary care by exclusion, one had tried obstetrics and gynaecology first but did not like it, and one cited the fact of not being interested in primary care after exploring it.

"I mean in medical school the teaching there had influenced us to choose the family medicine, I think it's, this has a big role because when I choose the family medicine it was like a field with so many mysteries, I don't have the full knowledge about what family medicine, what it is or so basically I chose family medicine by exclusion. Without proper knowledge about what is exactly the family medicine, how his lifestyle, what is dealing with exactly, yes I think we don't have enough education" (Participant 16, Kuwaiti, Male, 36 years)

Among the non-Kuwaitis, only two participants stated their clear interest in primary care, and the rest had interests in other specialities, including paediatrics, surgical specialities and humanitarian work. Some thought they might be able to revert to their preferred speciality after working in Kuwait.

"I am a paediatrician, I wanted to practice my knowledge and at that time I feel that the hospital, the system is more organised than before than the clinic. The clinic there was no system at all. No computer, no filing system, no no no. So I want to practice as a doctor, as a paediatrician so. I would like to be a paediatrician before, but I got the chance here in Kuwait and I think that unfortunately this system is a stopped nowadays" (Participant 157, non-Kuwaiti, Male, 68 years)

"I graduated from [name of country] in November 93 okay and I was hoping to be a surgeon but unfortunately I sat through the many exams but I didn't pass them so eventually they transferred me to the emergency department at [name of] hospital. That was not really appealing for me so last choice I needed to increase my income so the best choice available to me was to be a family practitioner so that you can get promoted financially" (Participant 157, Kuwaiti, Male, 51 years)

Among the nine female participants, two had been interested in primary care since medical school, one after joining the training program, one was a second choice, and one stated her passion for being a physician. The rest were interested in other specialities, mainly paediatrics and surgical specialities, of whom three stated that family commitments played a role in abandoning their interest and choosing primary care.

3.3.5. Knowledge and Skills:

Eighteen interviewees mentioned knowledge and skills; with no clear difference by nationality or gender. Several participants loved the variety of knowledge and practice in primary care, and others mentioned that their knowledge and skills increased by attending specialised clinics or with experience. Several discussed

attending other course to develop their skills. By contrast, a few participants talked about not being satisfied with the knowledge they had gained in primary care in comparison to a hospital career. A few complained about not applying the knowledge gained because they were taught much more than they need, as they only encountered minor cases.

> *"As I said it's like you didn't solve the problem. Here if you like you don't, okay you can discover some cases in the first, but after that no feedback, no final diagnosis, not known. Sometimes you make certain diagnosis in your mind but you wanted to know if it is correct or not. You gain more experience in the hospital"* (Participant 127, non-Kuwaiti, Female, 34 years)

> *"The beautiful thing in family medicine that you feel yourself having a good and great command on the subject of medicine and yeah you are not ignored in any field for example you have a good knowledge in surgery, in gynae in ophthalmology. In dermatology, being a family medicine"* (Participant 99, non-Kuwaiti, Male, 63 years)

> *"But our problem here or my problem here is not regarding the management skills, it is like we are more trained than our actual needs, we are not participating with our, we are not practicing what we have learned. So they teach us or they trained us in the board for much, much more than what we are dealing with, we are just here mainly treating upper respiratory and these, not actual problems" (Participant 16, Kuwaiti, Male, 36 years)*

3.3.6. Values:

Values were another major theme, mentioned by all of the interviewees. These discussions fell into two broad areas: medical values and religious and cultural values.

3.3.6.1. Medical values:

All interviewees discussed what they believed to be medical values. Kuwaiti doctors talked about the holistic approach of primary care, being the first line of contact for patients, and the easy access and free services provided by primary care in Kuwait. While the holistic approach of primary care was viewed as important, two participants felt it was not applied in Kuwait and two linked it to doctors' intentions of leaving or staying in the field. Ready access and free services were described by one interviewee as an advantage, but another suggested it was a way of abusing the services.

"We at family medicine, we always deal with the patient as a holistic approach, I think this is a good for us and this is why I like the family medicine but without a good system and with, with no appointment system and the emergencies we don't have this kind of holistic approach so I think the system is affecting us in how to deal with the patient as a whole patient" (Participant 16, Kuwaiti, Male, 36 years)

Among non-Kuwaitis, their discussion of medical values focused on the universal approach of primary care and the role of research in practice. Six participants cited the importance of dealing with patients as a whole, and all of them liked this feature in primary care; however, as with Kuwaiti doctors, two thought it was not fully applied in Kuwait.

"Yes you know when I started this job I was disappointed but after a while yes I have this feeling that it's a really good, it's a really good place to start with a patient and communication and you know to pick the problem it's really important" (Participant 5, non- Kuwaiti, Female, 45 years)

These values were equally important to men and women. However, some felt that the holistic approach to patients' treatment and following them up was not fully applied in Kuwait. Two suggested that ready access caused a burden on the primary care system, and two cited the need to shape the service by conducting academic research.

"The general practitioner work usually is related to more stuff with the patients and also sometimes with their families. If you compare this to the work in hospitals, there the doctor will deal with the disease. Here we deal with the kind of patient having the deal the disease. You go for MRI, for CT scan for like that for simple complains from the patient. For example, if there is very little pain in the joint, the first would be MRI for it. It is easy for them as a free, so patient will ask why you are, these services are limited for me I want to take it for free" (Participant 173, non- Kuwaiti, Male, 65 years)

3.3.6.2. Religious and cultural values:

Six interviewees mentioned religious or cultural values. Five participants stressed the role of culture in perceiving primary care as a female job, and three thought that such culture was influenced by needing more time for family commitments and not having night-on-calls. One Kuwaiti female participant cited the difficulty

in seeing patients alone without nursing staff present. One non-Kuwaiti male mentioned the role of Dewanyia, which is a male gathering in Kuwaiti culture, on influencing the health habits and beliefs of the community.

> *"To be honest the culture in our country is that it's more like a female based speciality ok but worldwide it's not the case"* (Participant 22, Kuwaiti, Male, 43 years)

> *"In all aspects of the health. You know there is sort of a mmm what can I say, habits and there is a tradition, what's called Dewanyia. In Dewanyia so many people they convey the wrong information, wrong health information to most of their friends and their partners and this is reflected very badly"* (Participant 99, non-Kuwaiti, Male, 63 years)

3.3.7. Other individual factors:

Many respondents spoke about autonomy, job satisfaction, and burnout which will be discussed in turn. Other issues less frequently discussed were prestige and abuse. Five participants, who were mainly non-Kuwaitis, mentioned the abuse they faced from dealing with patients and one cited the fact that Kuwaiti society perceives primary care as less prestigious than other specialities.

3.3.7.1. Autonomy:

Sixteen interviewees discussed autonomy, of which nine were non-Kuwaitis, and ten were males. Non-Kuwaiti participants had mixed views about autonomy and its role in doctors' retention. Some of them acknowledged the existence of limitations in prescribing certain medications or ordering investigations but saw it as a positive rule to control abuse of the system by patients, for example by demanding medications or referral for tests. Some non-Kuwaiti participants were frustrated by the rules in their practice leading some to suggest its role in influencing their decision to leave practice.

> *"No no no it is autonomy is quite good and we have the whole freedom to prescribe whatever except certain drugs which we call it, mental, [specific psychiatric drugs] the dangers, its considered as dangerous drugs because it affect the brain"* (Participant 99, Non-Kuwaiti, Male, 63 years)

There were also mixed opinions regarding clinical autonomy between Kuwaiti interviewees, in which some were very critical about the limitations on their practice, especially in using their clinical skills. However, other doctors felt it did not affect their practice and one cited clinical autonomy as a factor of satisfaction.

"One of these, this there is restriction for the family physician to write some investigation. We are not allowed to write all the investigation and it's not open for us. There is some restriction for investigation and some from the ministry. The family physician is allowed to write these special kind of investigations and this makes our job difficult really, in these cases we are doing a lot of referrals and we don't like to do a lot of referral. Our job is to complete service for the patient" (Participant 124, Kuwaiti, Female, 42 years)

"Yeah yeah we run our clinic as we plan for it. The limitations are very minimal mainly for medication. The shortage of medication. Also minimal there is very few medications we cannot prescribe. That we should refer for to the hospital. Very minimal although it's demanding from patients but it's very minimal" (Participant 80, Kuwaiti, Female, 34 years)

Four of the female doctors interviewed were critical about limitations to their autonomy, citing limitations to their practice imposed by current regulations, and the role of the higher management in limiting their autonomy. Out of the ten males who mentioned autonomy, only one was critical about it. For him, this lack of autonomy was the reason he was planning to leave primary care.

"He will go [the patient] up and talk to the administration and or go to another doctor and they will disagree with me which causes a problem because the patient will see that I'm wrong even though I'm probably right" (Participant 24, Kuwaiti, Female, 29 years)

3.3.7.2. Burnout:

Almost all interviewees talked about burnout and its impact on doctors' retention. Gender and nationality were not major influences on these views. Burnout was mostly linked to workload or shortage of staff. However, not all of them thought that feeling burnt out would motivate them to leave primary care; CPD activities and regular leave were viewed as important in reducing burnout.

"Everywhere has burnouts and has but the good thing that you can take [leave] anytime, you can take annual leave, just go away for a week or two and you can come back again fresh" (Participant 22, Kuwaiti, Male, 43 years)

"Yeah depending on the place of work. I don't know about this, outside Kuwait but in Kuwait where I work in [district E] it is very crowded compared to the city. So many patients and we have a huge shortage of doctors where we can barely manage to see all the cases and treat them all perfectly, well of course as doctors we are doing our best and I'm sure that all the patients I see are very happy but we cannot help the crowd and as you said at the end of the day we get really burned out because it's a really really hard time when there is, like in these months" (Participant 162, non-Kuwaiti, Male, 30 years)

3.3.7.3. Job satisfaction:

All of the participants mentioned job satisfaction in their interviews. Out of the ten Kuwaiti interviewees, three described themselves as satisfied with their current situation, three were not satisfied, while the remaining four did not have a strong view either way. The causes of partial satisfaction or dissatisfaction varied between participants, but routine work, reduced autonomy, workload, unorganised work, and lack of appointment systems were all important factors. Other causes such as the KBFM and primary care being obliged to provide whatever patients want rather than what they need were also mentioned. Attending CPD activities, conducting specialised clinics, autonomy, and being involved in other activities such as teaching all increased satisfaction.

"I'm a family physician but I'm working not like a family physician. Family physicians should have appointment systems which we don't have, only for the diabetic clinic we have it, the other things no. Our main work is the primary medications and referral. You feel like you are working like a casualty officer. That's the thing. The problem with family medicine as well, since I am a trainee until I'm a consultant I do the exact same work. I will cover the exact same hours like you have been standing in the same thing, same work for the rest of your life. It's kind of boring and no development" (Participant 1, Kuwaiti, Female, 36 years)

Among non-Kuwaitis, six described themselves as satisfied, three were not satisfied, and one was moderately satisfied. The causes of satisfaction for them were also patient contact, the range of patients seen and CPD activities. Causes of dissatisfaction among non-Kuwaitis were that they were interested in other specialities, the lack of patients' follow-up and appointment system, workload, and the relationship with peers and higher management.

"[why he is satisfied] Ah yeah because I deal with all kinds of patients. The old, the young, the elderly and male and female. There is no particular patients' category I deal with. I treat all kinds of diseases of course it depends on the severity of the disease whether its severe or not severe, mild, moderate, chronic or acute" (Participant 162, non-Kuwaiti, Male, 30 years)

"But for the time being it was unsatisfactory because of the nature of our work with too much patients here in our time" (Participant 187, non-Kuwaiti, Male, 65 years)

More of the men interviewed said they were satisfied with their role in primary care, compared to female participants. For both, the most frequently mentioned cause of satisfaction was patient contact and patient variety, and other activities such as teaching. Causes of dissatisfaction included the lack of an appointment system and the walk-in nature of primary care services in Kuwait. Again, CPD activities were cited as helping to improve satisfaction while excessive workload decreased it.

3.4. Societal system of STF:

As described in previous chapters, the societal system has six categories; educational institutions, professional networks, media, family, peers, workplace. As mentioned earlier, peers and professional networks categories were merged due to the close relationship found by the researcher in the systematic review. Also, due to the small number of comments by interviewees about the effect of the media, which was mainly about the need to increase publicity about primary care in Kuwait, it was not to present those findings here.

3.4.1. Educational institutes:

The interviewees' comments regarding educational institutes focused mainly on postgraduate programs, followed by medical school and continuous professional development. Other areas that were cited were role models, returner schemes, and teaching.

3.4.1.1. Postgraduate education:

Almost all of the participants cited the postgraduate degree programme in their interviews. Most of the Kuwaiti interviewees were satisfied with the KBFM programme, especially that it was accredited by the RCGP. However, three participants cited the workload during the training programme, and one of them mentioned the increased administrative workload. Three Kuwaiti females mentioned the negative impact on their families during the training programme.

"That was, I don't want to talk about it. Just exhausted, always loaded by non-medical practice. Yeah we don't take a lot of chance to get an experience or exposure for I mean something we need to practise that we can decide because at the end of the training year I couldn't decide about any of the specialities other than orthopaedic that I was thinking about" (Participant 80, Kuwaiti, Female, 34 years)

Among non-Kuwaitis, who were mainly males, the main discussion point was their inability to pursue any postgraduate degree on a part-time basis while they are working, as it is not accredited in Kuwait. The non-Kuwaiti interviewees also mentioned the difficulty in being admitted to the KBFM programme.

"Not allowed for them in Kuwait. If you are not Kuwaiti, you are a foreigner, if you take any postgraduate while you are working here it's not accepted" (Participant 173, non-Kuwaiti, Male, 65 years)

3.4.1.2. Medical school:

All of the participants commented on the role of the medical school in influencing career decisions. The non-Kuwaiti interviewees were divided, as five thought that medical school had an influence on their career decisions, even in pursuing non-primary care specialities, while the other five mentioned that it did not have an effect. On the other hand, almost all of the Kuwaitis thought it had an effect in choosing any medical career in general, and in particular primary care. Four Kuwaiti females cited their positive experience and the major influence of their medical school in choosing primary care, all of them studied in the same university in Bahrain. Two other Kuwaitis cited the role of their positive experience in studying primary care in the UK and Ireland, respectively. Two females, one who graduated from Kuwait, and the other a tutor in the postgraduate programme, criticised the primary care curriculum in Kuwait University, as they felt the exposure to primary care was too short.

"The programme there is, they are giving us a full year to study for family physician. They distribute us in the clinics and I mean the health centres, and they assign us for a special family. We are giving home visits for this family, screening advices so we are going for the family at their house. I like it from of this" (Participant 124, Kuwaiti, Female, 42 years)

"Actually in Kuwait I think we have only 3 months in the medical college with family medicine but it's not enough to know what is the real life of family medicine" (Participant 191, Kuwaiti, Female, 37 years)

3.4.1.3. Continuous professional development (CPD):

Almost all of the interviewees commented on CPD activities, and almost all of them appreciated the importance of such activities in improving their knowledge, improving satisfaction, and reducing burnout. Two male participants commented that educational activities can improve doctors' retention. However, for some, the fact that most CPD activities are out of working hours made them difficult to attend. One solution suggested was to hold such activities within their working centre or being given permission to attend during working hours. Also, one Kuwaiti female doctor commented that the courses were always full in the capital, because of the high number of doctors in the area, and one non-Kuwaiti male cited that these activities were only for Kuwaitis.

"I think breaking the routine with just dealing with patient's daily routine this is a bit of negative so having like a frequent lecturing, frequent activities will decrease the burnout we are feeling" (Participant 16, Kuwaiti, Male, 36 years)

The effect of role models in shaping interviewees career intentions was mentioned by three participants. Two thought that implementing a returner scheme for GP leavers would not improve their retention or encourage them to return to practice. Teaching and scholarships for Kuwaiti family physicians to pursue a special interest were also mentioned as positive.

3.4.2. Peers and professional network:

All commented on the role of their peers on their career intentions. Most of the Kuwaiti interviewees thought that their co-workers were supportive, and they did not have any problems with them. However, three female participants cited the lack of support from higher management and one male mentioned the conflicts between colleagues because of the workload. One female, who was now satisfied with her relationship with her colleagues and higher management, changed her primary care centre because of conflicts with her supervisor. Finally, two interviewees clearly stated that the relationships with their peers influenced their career intentions in primary care.

"My head of the polyclinic gave false information to this patient and she didn't support her team and she didn't support me and she was against me actually so I went to the, the head of the area. She was very supportive and the head of the [District A] medical and the head of the primary care, both of them where very supportive……..,Yeah that is one of the main reasons and that time when you gave me the questionnaire I was going to leave family" (Participant 1, Kuwaiti, Female, 36 years)

"[Names the head of the centre] She is a great leader and she is, she has a lot of international relations. She wants to establish the family medicine so she has this power" (Participant 25, Kuwaiti, Female, 37 years)

A different view was given by non-Kuwaiti participants, in which only two, who were males, thought they had a supportive relationship with peers, two were neutral, and six cited problems with colleagues or higher management. Examples included disharmony with the higher management, workload as a cause of conflicts, lack of support from the administrative staff, some peers perceiving primary care in lower status, and lack of support in increasing personal knowledge and discussing cases.

"You must work in harmony with your colleagues. If you lose this harmony between you and your colleagues or your boss it will be hard to work with this tension and stress" (Participant 187, non-Kuwaiti, Male, 65 years)

Most mentioned the role of professional networks in general and their influence on the recruitment and retention of GPs. While one Kuwaiti participant cited the positive role of Family Medicine Association (FMA) by organising different activities, two non-Kuwaiti participants commented that they did not know about the role of the Kuwait Medical Association (KMA) and FMA. Fourteen interviewees mentioned the lack of support from both KMA and FMA and the absence of their role in improving the recruitment and retention of primary care doctors.

"Well they could have had better input, Still the role is not, is not as effective as it should be. And their influence, I'm sure they can have good influence and can have good influence and positive influence. More positive influence but they are still unfortunately to the expected level. They can do a lot of things. Policies, changing policies, more support, more payments, more recruitments, even simple things like

spreading the meaning of family medicine in the community because actually most of our community and society they don't know exactly what is family medicine" (Participant 22, Kuwaiti, Male, 43 years)

3.4.3. Family:

Almost all of the interviewees commented on the role of the family in choosing or leaving primary care. All of the Kuwaiti interviewees, except one female doctor, agreed that family had a role in primary care doctors careers, even if it did not affect them personally. Two male Kuwaiti doctors mentioned their families played a role in making them stay in their current jobs, one because of the family perception on leaving and the other due to the fear of losing stability if he changed career. Among the five Kuwaiti females who agreed that family had a role, only two chose primary care for familial circumstances, and both of them are married to doctors.

"I got married and I had kids and my husband is a surgeon so it was, he said it's better for you to go to another speciality. I was thinking, I thought like you know primary care is the primary thing. I felt it's like octopus, you have hand in everything, in surgery, in gyny and whatever so what's in, the fantasy I had about family medicine it's completely different than the reality. ……. [on her sick child] Shall I leave medicine and that was the plan. I would leave the medicine to go to seek medical help for my child……One of the people who have been pushing forwards for me to go to family medicine. She used to know a couple of people working in the family, in the old family programmes and how they enjoy their live, they don't have nightshifts. They don't have afternoon shifts all of them now they are dealing with the administrative things" (Participant 1, Kuwaiti, Female, 36 years)

Among the non-Kuwaiti interviewees, six males and two females believed familial issues could influence career decisions, while only one male thought family had no effect. Two male interviewees described how they needed to leave Kuwait to give their children the chance to join higher educational institutes as it is difficult and expensive in Kuwait. Another participant mentioned the negative perception of working in primary care by his family and other doctors' families on working in the field. Both females mentioned the effect of their families on their career plans in terms of choosing or leaving primary care.

"Yeah they do of course. A lot of people they ask doctors they think that they want to be, to have to be like big shots in their family. Like I'm the best doctor in my family in case there is a competition of doctors in that family or if he is the only doctor he will not be satisfied with just a normal doctor, a general practitioner" (Participant 162,non-Kuwaiti, Male, 30 years)

"You know for me yes I'm sure that my family is number one for me but I'm not sure about other doctors. Usually not. Maybe this is why I choose this one because I'm a female and I need to be with my kids for long time so this is why. For us as non-Kuwaiti you know it's difficult. It's difficult I will say if I know that I would be in this career for until my kids finish their college I will stay but I'm not sure. I don't know what will happen and after I you know if I got sick I will leave and I won't have anything to do after that" (Participant 5, non-Kuwaiti, Female, 45 years)

3.4.4. Workplace:

The workplace was the main theme in the social system in terms of the numbers of subthemes and comments by interviewees. Twenty-seven subthemes were identified under the workplace, although some issues were discussed by only a few interviewees. Here, data relevant to the themes discussed by the majority of participants are presented.

3.4.4.1. Workload:

Workload was one of the main topics discussed by all interviewees. Most agreed that there was a huge workload burden on primary care doctors. The high workload was mainly attributed to the high number of patients seen, especially in the general clinics, which are walk-in clinics. The participants mentioned different numbers of patients seen during a shift, with the lowest estimate 30-40 patients, and highest 160-240 patients. Those running specialised clinics also complained about workload in terms of patient numbers, which could reach 35 patients in a seven hour shift. They sympathised with their colleagues working in the general clinics dealing with such high workloads. Two Kuwaiti interviewees discussed their administrative workload, blaming the new accreditation programme as the cause. Only one participant felt that their workload was acceptable. Another Kuwaiti participant acknowledged his workload but argued that it all comes to work organisation that can lead to reducing such load, which is applied to his centre. Four interviewees linked high workload to intentions to leave primary care, either in their own career plans or their colleagues.

"Many causes, it is like overloaded, we are in overload situation with the patients, overloaded in the tasks, we have clinical work and like administrative also tasks, especially recently like last 3 years with the accreditation programme so there are more, more tasks required from us. We have same number like the man power is same number of doctors but the tasks are much more, It is like in-between if it is administrative work I have no problem with it but if they like give me just this task I will be fine like if

it is only accreditation they give me enough time I will have no problem, but the problem is you have same time, same number of patients, overloaded with the accreditation so it is the mixing is the problem" (Participant 16, Kuwaiti, Male, 36 years)

"This is like if, this I'm now I'm just transferred to this clinic and I was like blessed to come to this clinic. Here only the maximum I see is 90 per duty. About six hours and this is nothing compared to I used to work in [names another centre, which a bit more remote] I would see 160 to 240 patients per not six hours but over 9 hours, I don't think that in this number you can do anything right, so the 11 doctors see the population of 80,000. 80,000. That's not the problem, the problem is that (names his previous centre) on a daily basis sees from 1000 to 1500" (Participant 150, non-Kuwaiti, Male, 39 years)

Another factor that was commented on by eight interviewees and linked to workload was issuing sick leave notifications for patients. Participants discussed the burden of issuing sick leave notices on their workload and on the primary care system, estimating that 30-50% of the total cases seen were coming for sick leave purposes.

"[Speaking about sick leave] Yes it is a huge problem, I think our system is designed in a very bad way like any patient who needs a sick leave you should go to the clinic, so maybe like in my centre now in the afternoon shift I am sure around maybe 50% of what, of the patients coming 50% of them they just come for the sick leave and many of them are not even straightforward, they manipulate, they tell you false complaints just to have the sick leave" (Participant 16, Kuwaiti, Male, 36 years)

Participants also linked workload in particular the health district, and shortages of staff. For example, interviewees thought that more remote districts faced higher workloads than the capital; shortages of staff also contributed to workload.

3.4.4.2. Working hours and nights-on call:

There were mixed opinions about the working hours in primary care. Out of the nine Kuwaiti interviewees who mentioned working hours, three were not satisfied with the working hours, four were satisfied, and two had no strong opinion. There was no discernible difference in opinion according to their gender. Two out of the three who were not satisfied specified the problem of not having the weekend as non-working days and one said working hours were among the reasons that made them think of leaving primary care. It was similar among

the non-Kuwaiti participants: four were satisfied with their working hours, including two females, three were not satisfied, all of whom are males, and two thought it is acceptable. Among those who were not satisfied, two mentioned the lack of rest breaks during their work, and one talked about 24 hour opening times for primary care centres, which he felt was unnecessary.

> *"They change the duty, the way of the duty like first of all as I said we are, we don't have any appointment system so that in the weekend will be much more worse because in our duty system we go like in another clinic and that clinic it is much more crowded we see many patients from other areas, they don't belong to us, we don't know how to deal with them. So if you minimise that it will have a big impact on us"* (Participant 16, Kuwaiti, Male, 36 years)

Working hours were clearly linked to four other subthemes: work-life balance, family, gender, and comparison to hospital careers. In terms of work-life balance, slightly more participants thought that working hours were adversely affecting their work-life balance. More than half of the participants linked working hours to family, with a slightly higher number of females reporting that their current working hours benefited their families as they could spend more time with them. Most of the interviewees who discussed working hours and gender cited that it is better for females and for their familial circumstances. Finally, most of the participants who commented on working hours and other hospital specialities thought that current working hours were roughly the same as those working in hospitals.

There were mixed views about nights on-call. All of the non-Kuwaiti interviewees commented on nights on-call, while seven Kuwaitis commented on it. Non-Kuwaiti doctors criticised the overnight shift and its adverse effects on their families, and two felt that primary care should not be a 24-hour service. In contrast, there was little criticism from Kuwaitis about the nights-on call; two female participants commented on the privilege of not having nights-on call.

> *"The thing is with night duties we only do it for once a month, again but from my point of view we shouldn't do. Primary health is not a 24-hour service. Whatever is the excuse, whatever anything. But again its only one night so I don't complain about it. It's not like regular thing"* (Participant 150, non-Kuwaiti, Male, 39 years)

"Yeah we don't have it because that's one of the reasons we shift for family medicine, escaping from 24 hour, especially for female" (Participant 191, Kuwaiti, Female, 37 years)

One explanation might be the different expectations of Kuwaiti and non-Kuwait doctors with respect to on-call. The interviews highlighted a discrepancy between Kuwaiti and non-Kuwaiti participants about on-call in terms of it being compulsory or optional and if doctors were paid for it. For instance, one Kuwait participant mentioned that nights on-call were optional, while two non-Kuwaitis said it was compulsory. Also, two Kuwaitis mentioned that there was an incentive for attending nights on-call or overtime for non-Kuwaitis, and one said they do not receive any financial incentives. Five participants, three females and two males, also discussed the needs of female doctors for careers without nights on-call either by preferring primary care or criticizing the nights on-call in hospitals and primary care. Finally, two females commented on the unsafe environment during the afternoon and night shifts in primary care

"Yes for the night duty at all. It's not prepared well for a night duty. You know the patient that will come after this 24 hours rules they are abusing for this clinic because anybody can come any time he wants for nothing. For something cold, for something that he used to suffer from long time before and even when the patient that needs some emergency case, it's not very good prepared here to help him…..[speaking about the availability of supportive staff] It's enough actually it's enough but it's not secured enough" (Participant 5, non-Kuwaiti, Female, 45 years)

3.4.4.3. Rules and regulations:

All of the participants discussed, at some length, the rules and regulations governing primary care practice. There was agreement among Kuwaiti interviewees about the need to implement a proper appointment system in general practice clinics as in the specialised clinics. Four interviewees mentioned the need for establishing a job description for primary care doctors, and two females criticised the vagueness and unstable regulations. Participants also criticised the obligation to attend courses for promotion without giving people time in their working day for it and the new rule allowing patients from any area to visit any centre out of their areas. Two non-Kuwaiti females criticised the rule of not being allowed to take maternity leave.

"From the way you are supposed to practice it I mean I have been in [the country where he studied] for eight years okay and this is definitely not the way to see a doctor. You have to go and take an appointment, but here as I told you it's a like a supermarket, that they pass by the clinic, they can go into and see a doctor and open his mouth I have this and that" (Participant 65, Kuwaiti, Male, 51 years)

Non-Kuwaiti interviewees had different views regarding the appointment system. While four recommended establishing such a system, the other six were doubtful about its benefits and applicability in Kuwait. Three interviewees criticised the promotion rules for non-Kuwaitis, finding them difficult and frustrating. The other main issue related to sick-leave. Most suggested sick leave rules needed to be changed to avoid the crowdedness and workload.

"No I am eight years and I still did not get any promotion. No for non-Kuwaitis more. It is, I think it is not the, it is linked to the education level also, and it is linked to the main thing. It is the verification of our documents. I am still stuck in the verification of my [named the process in Arabic] of my equivalent of my degrees. I have applied three times, in 2011 and 2016 and now again in 2019 but still I did not get any answer from the ministry. Equivalent of my MBBS degree which is MD degree. In Kuwait we have to verify here. It should be equivalent to the system here in Kuwait and it is a very complicated, very lengthy and impossible procedure here in Kuwait" (Participant 37, non-Kuwaiti, Male, 39 years)

3.4.4.4. Patient relationships and demands:

Most discussed patient relationships and demands and its effect on them and their career decisions. The issues raised were similar for both Kuwaiti and non-Kuwaiti doctors and for males and females. Most talked about their passion for dealing with patients, and one of them mentioned that it increased his job satisfaction. However, some described facing several problems related to patient contact, including the increase in patient demand, lack of respect, and experiencing conflicts with patients. For some, especially the non-Kuwaiti participants, these demands were fuelling their decision to leave practice. However, a few mentioned that their career decisions to leave primary care might be changed because of missing patient relationships.

"Like for once when I explain to the patient that her son had asthma she told me that I'm just at family medicine and shouldn't be diagnosing anymore of anything. I get more respect in the hospital than here. In here like I think in polyclinics in Kuwait its dealt with like a shop. The patient is a customer they are not a patient, So the customer is always right and the doctor always not right so it doesn't

matter if you did something right, the administration will not have your back, So to avoid all of this to happen, the waiting outside, the bad words, the rude patients, and sometimes it will affect my evaluation as well by administration because they don't like to dissatisfied patient even though we are right" (Participant 24, Kuwaiti, Female, 29 years)

"Well here the relations with the patients are very good because they are a limited number of patients to the hourly doctor every day. So every doctor approximately they know the patient by name and even they recognise by voice when any patient is coming. Good relation, good respect from the patient and patients even know by name every they can recognise so this is another reason I want to stay here in the same clinic and in the same speciality as GP" (Participant 37, non-Kuwaiti, Male, 39 years)

Conflict often arose when patients wanted sick leave notification. Interviewees also highlighted the need for community awareness and educating patients about the role of primary care and other issues such as antibiotic use. Several interviewees also mentioned the difference between health districts in patient relations, suggesting that doctors in the capital have better relationships due to better education of the population.

"Since work more or less allow for the patient to be somewhat not a patient. Here maybe ask for a special investigation. He would be just coming for special orders to read. Asking for a special investigation are not needed for the very, the side opinion of the doctors" (Participant 173, non-Kuwaiti, Male, 65 years)

Again, however, the positive impact of training was raised as three interviewees highlighted the role of patient communication courses received during postgraduate training and establishing a good rapport with the patients in absorbing patient demands.

3.4.4.5. Type of work:

Fifteen interviewees commented on the nature and type of work they were undertaking. Among the Kuwaiti participants, some felt they were not practising primary care as studied, but instead were just working as medication and investigation dispensers. Three interviewees commented on the impact of administrative work, one female cited that male primary care doctors usually transfer to administrative positions, one female mentioned the burden of not being trained to handle administrative tasks, and a male participant stated his hesitancy in transferring to an administrative position as he did not know what to expect.

"I'm a family physician but I'm working not like a family physician. Family physician should have appointment system which we don't have, only for the diabetic clinic we have it, the other things no. Our main work is the primary medications and referral. You feel like you are working like a casualty officer not a family physician" (Participant 1, Kuwaiti, Female, 36 years)

Similarly, several non-Kuwaiti participants felt that they were not practising the ideal primary care, with two commenting that they were working just for prescribing purposes.

"Yes this is takeaway clinics. For common cold, upper respiratory tract, gastroenteritis and some but, but chronic clinics, there is more respectable work and more scientific work, you feel yourself that you are working as a doctor, there is scientific work" (Participant 157, non-Kuwaiti, Male, 68 years)

Several linked their job satisfaction, or lack of it, to the work they were doing. Causes of dissatisfaction were again lack of appointment systems, not practising the ideal family medicine or primary care model, and the perceived lack of interesting cases in primary care.

3.4.4.6. Work-life balance:

Almost all of the interviewees discussed work-life balance. Among the nine Kuwaiti participants, five stated that they had a good work-life balance, three felt it was poor. More females seemed to be satisfied with their work-life balance, while the two males were divided in their opinions.

"Especially if you like, in our work like about 8 or 9 hours wasted, when you go to home you are relaxed for like 3, 4 hours, you don't have any time for doing any hobbies. I don't know if we can find like administrative job with less stress, more time, could be, but I am not sure" (Participant 16, Kuwaiti, Male, 36 years)

A different picture was drawn by non-Kuwaiti interviewees, in which five were not satisfied with their work-life balance, four were satisfied, and one had no opinion. While both females participants were satisfied with their work-life balance, all of the five non-satisfied participants were males. The working hours was often discussed along with work-life balance.

"[about those who think there is no work-life balance] They are spoiled actually! You know because there is time. I don't think that there is any doctor around the world have the time that we have here" (Participant 5, non-Kuwaiti, Female, 45 years)

"No no not with these working hours, 24 hours and extra duties that they give you, you cannot stay with your family" (Participant 173, non-Kuwaiti, Male, 65 years)

3.4.4.7. Buildings and structural issues:

In relation to structural issues, there were no differences in terms of participants' gender or nationality. Nine participants felt that the primary care centre buildings they worked in were good, although two mentioned that their buildings required renovation or rebuilding. More important was the unsatisfactory computer systems, which many described as old, experiencing frequent problems, and not connected to the hospitals.

"Our computer system is very old, it is very slow retrieving patient records, it's very terrible, so I think it is also another factor why we are leaving the family medicine because of our old system, sometimes by the way sometimes it works, a lot of times it stop working" (Participant 16, Kuwaiti, Male, 36 years)

3.4.4.8. Career break:

Seventeen interviewees discussed career breaks, of whom nine were Kuwaitis and nine males. Among Kuwaiti participants, five mentioned that career breaks would be good for their careers, although female participants were less clear on whether career breaks would be helpful. Non-Kuwaiti participants had the same opinion. Six interviewees thought career breaks would be good and would improve doctors' retention and might change the idea of leaving to continue studying or for family commitments. However, five of these interviewees stated that career breaks are not allowed for non-Kuwaitis.

"Before it was applicable and some doctors take leave for about six months and take speciality and come back but now it is not available and not permitted" (Participant 187, non-Kuwaiti, Male, 65 years)

3.4.4.9. Contractual status:

Sixteen interviewees, evenly divided according to nationality and gender, discussed issues related to career development and contract status. Among Kuwaitis, four mentioned that there had been no change or development in their careers with promotions; however, two others disagreed and cited that workload and type

of work changed with promotions. One also commented that non-Kuwaiti doctors could get promoted but without any change in their job descriptions. Three non-Kuwaiti interviewees appeared to verify this, commenting that there was no change in non-Kuwaiti doctors' work when they were promoted. However, the main focus of non-Kuwaitis discussion was their inability or the difficulty in getting promoted compared to Kuwaitis; this was raised by five interviewees.

> *"If you finish the board or before the board the work is exactly the same, same number of patients, same responsibilities, so you don't feel if you compare us to the hospital like when they finish the board they have like more privilege they feel the difference, but here it is the same routine so this is a strong factor"* (Participant 16, Kuwaiti, Male, 36 years)

> *"No not me, everybody. When you're not promoted in any field you feel yourself stagnant and when you feel yourself stagnant, not improving, you feel yourself not there. You are not represented"* (Participant 99, non-Kuwaiti, Male, 63 years)

3.4.4.10. Higher management support:

Seven interviewees discussed higher management support with similar views expressed by Kuwaiti and non-Kuwaiti doctors. Lack of support in implementing the appointment system, supporting the doctors' clinical decisions, and differences in management support between health districts were all described. One suggested that there might be a lack of communication and understanding between doctors and higher management and several suggested that the lack of support could lead to doctors leaving primary care.

> *"So the customer is always right and the doctor always not right so it doesn't matter if you did something right, the administration will not have your back. [patient] He will go up and talk to the administration and or go to another doctor and they will disagree with me which causes a problem because the patient will see that I'm wrong even though I'm probably right"* (Participant 24, Kuwaiti, Female, 29 years)

3.4.4.11. Special interests:

Sixteen interviewees discussed the notion of supporting special interests in primary care, with no clear influence of nationality or gender. There were mixed opinions about the benefits of implementing GPs with special interest and if these roles existed or not. A few participants were either planning to pursue a special

interest, hoped they would have the chance to pursue it, or had planned to do it and changed their mind. A number felt that a career option could improve their job satisfaction, although one person worried that it would increase personal workload.

3.4.4.12. Remuneration:

Remuneration was discussed frequently by the interviewees, and their comments were focused on two main areas, income and financial incentives.

Eighteen participants mentioned income during their interviews. They were evenly divided according to their nationality and gender. Among Kuwaiti interviewees, five participants were satisfied with their income while the other four were not. Reasons included income that was lower than neighbouring countries, and income levels that were lower than hospital doctors in Kuwait. A different picture was drawn by non-Kuwaiti participants; here most were happy with their income. However, two were not, due to the low basic salary and the difference compared to Kuwaiti doctors' salaries. Five comments were made by Kuwaiti doctors about the income of non-Kuwaitis, in which two thought they received a good income, while three mentioned that their salaries needed to be increased.

Eleven participants mentioned financial incentives during their interviews, of which seven were Kuwaitis. Again, one issue was the lower level of on-call payments for primary care compared with hospital-based care. Another was the deduction of on-call allowance when doctors were on leave. Two interviewees suggested establishing an activity reward system based on achievements, and one mentioned that primary care doctors were not allowed to receive excellence payment during training while other specialities did. One participant suggested that increasing incentives might increase doctors' retention.

> *"The reason for this is because you will then run the service and you will get paid according to the effort that you put it in. Now we are putting in a lot of effort but our salaries are the same as those who are not doing anything or basic. I'm not saying anything but doing let's say 20% of we are doing"* (Participant 22, Kuwaiti, Male, 43 years)

The non-Kuwaiti participants also criticised the deduction of on-call allowance during leave. Workload was also a factor, with one commenting that even when on-call was remunerated he could not take it as he would be exhausted. For one interviewee, another issue was the expensive nature of housing and schooling in Kuwait

and that doctors need to pay for health services, which he recommended should be covered by adequate financial incentives.

3.5. Societal-environmental system of STF:

As described earlier, this system consists of several elements: geographical location, employment market, socioeconomic status, political decisions, globalisation, and historical trends. During the interviews participants focused on geographical location, employment market, and political decisions; no comments were made about globalisation, socioeconomic status, and historical trends.

3.5.1. Political decisions:

Several topics were discussed that mapped to political decisions; other issues which also mapped to this theme were higher management priorities and resources.

Almost all of the participants commented on the role of political decisions in general on primary care. Out of the nine Kuwaiti interviewees, seven thought political decisions had a mainly negative effect. One person commented that decisions changed with every new Minister of Health. Participants particularly commented on decisions to implement the 24-hours opening rule, the rule of accepting patients out of the centre area, and ineffective recruitment policies. One person mentioned that free access to healthcare was another political decision affecting primary care, and another stated that political decisions increased workload.

> *"Negatively if I'm going to be, a guy in you know in [names an area in district D] with population not exceeding more than 25 to 30,000 why do I have to open the clinic during the weekend? What's the necessity to do that? It is I think a waste of resources, doctors are stressed, nurses and you know like a whole centre is open for two days just to receive about 40 to 50 patients as total. So this is a waste, why because one of the what do you call it, the parliament wants to be open for his district"* (Participant 150, non-Kuwaiti, Male, 39 years)

Among the ten non-Kuwaitis who discussed political decisions, six thought they had an effect on primary care, while the others thought not or had no opinion. Issues raised included the strict non-Kuwaitis recruitment policies in K-MOH, the aforementioned 24-hours opening rule, and referral rules to hospitals. One male interviewee thought that political decisions might have a positive effect, especially with the pressure on members of the parliament to open other services in the centres, such as laboratories.

Nine participants talked about resources in primary care, including the lack of resources such as medications in special areas, better resources in the private sector, and the lack of resources in some health districts. Four raised issues related to higher management priorities. Among the Kuwaitis, one felt there was the lack of goals and plans in K-MOH, while another felt that implemented policies were not suitable for primary care due to the lack of knowledge among the policymakers about the real work of primary care. One of the non-Kuwaiti interviewees commented that doctors' job satisfaction was not a priority in K-MOH, and another mentioned the lack of planning concerning doctors' recruitment.

3.5.2. Employment market:

The interviewees discussed several topics that mapped to the employment market, but they focused on the shortage of doctors and administration staff and changing their careers.

The shortage of staff was discussed by seventeen interviewees. All of the eight Kuwaiti participants cited a shortage of doctors and several also commented on the variation in the distribution of doctors between health districts. One suggested that doctors transferring from primary care to administrative positions played a role in the shortage of doctors. Two also highlighted the shortage of support staff in their clinic and its effect on their workload.

> *"Since 2007 until now this year we don't have any family physician in this area working in the clinic. All are heads of clinics, all of them are GPs. But for this year 2018 the ministry they forced the family physician, who recently graduate to come to [district D]"* (Participant 124, Kuwaiti, Female, 42 years)

Non-Kuwaiti participants also mentioned lack of staff as an issue, including both support and administrative staff. The shortage of doctors was attributed to workload and doctors leaving or transferring to other areas.

> *"And we have two doctors that resign and we have two doctors shifted to another areas but the ministry didn't compensate this shortage and one clinic four doctors which is less"* (Participant 187, non-Kuwaiti, Male, 65 years)

All of the interviewees talked about their career plans in terms of leaving or staying in primary care and if leaving to which field. Out of the ten Kuwaiti participants, six thought of leaving primary care, while three had never thought about leaving. Among those who thought about leaving, two wished for an administrative job,

one would like to move to the private sector, one was considering a hospital career. At least one female participant, who had previously changed her career from surgery to primary care, thought about leaving for familial issues and conflicts with her superiors.

> *"It's very difficult to that as well unless you know someone. The personal influence. You will not be able to do it, you cannot move to another department. The decision has to be taken by the minister, he's the only one or his what do you call him? The vice minister. They are the only people who can grant you this, I don't know to call it. The transfer to another department. [When asked if it is available for him will he do it?] Oh yeah definitely"* (Participant 65, Kuwaiti, Male, 51 years)

Non-Kuwaitis had different opinions about leaving; five interviewees mentioned that they were not thinking of leaving, two were, and two thought that the time had passed for changing their career, and one mentioned that might change if she left Kuwait. Reasons for leaving included other interests, the impact of rules and regulations, and family commitments, as discussed in sections 3.3.4, 3.4.4.3, and 3.4.3 respectively.

> *"No in primary health care they depend on a number of doctors. If anyone wants to shift to another place there must be another doctor to replace him in the same position. So it is difficult to bring another doctor from hospital to take my place, Not the ministry, our boss here in the region"* (Participant 187, non-Kuwaiti, Male, 65 years)

3.5.3. Geographical location:

Several topics were discussed that related to geographical location, mainly related to migration and to the health districts in Kuwait.

Migration was an issue raised mainly by the non-Kuwaiti participants. Two were planning to leave Kuwait, one to pursue a career in paediatrics and one was planning to migrate for a better life for her and her family. A few commented that they would leave Kuwait if younger or would move for a better life and to work in a better health system. One participant also suggested that some non-Kuwaitis come to Kuwait as a transition state to pass speciality exams and leave.

Nine participants, five Kuwaiti females and four non-Kuwaiti males discussed issues related to the health districts. Three participants were working in the Capital district. Two felt privileged to work in the centres in that area, while the other commented on the different nature of the work between centres because of the age of the population. Interviewees working in districts further away from Kuwait City complained about the shortage of doctors and the variation in their distribution between districts. Longer driving time to these more remote districts made one think about moving to the private sector; they also thought this was why most of the doctors in this district were non-Kuwaitis. One participant from another district mentioned that the lack of appreciation from the management in the area made her feel that she wanted to leave primary care.

The health district subtheme was repeatedly co-coded with patient relationships and demands and workload. Six participants compared patients' relationships with doctors, their demands and the districts' population educational levels, in which only one mentioned that there was no difference across districts. The others believed that there were differences, which might lead to difficulties in dealing with patients in specific areas. Eight participants discussed the workload differences between health districts, and all of them agreed that out of the Capital, especially Jahra and Ahmadi Districts, the workload was higher.

> *"In this area we have good patients who are well educated, this is our area. But maybe in other places some uneducated patients, some not good patient can fight easily with the doctor, can talk bad words to the doctor. This is another problem. [In this area –district B] Good people, they give us rest in dealing with them, than other areas maybe less educated by Badawi area or rural area"* (Participant 64, non-Kuwaiti, Male, 45 years)

3.5.4. Subthemes that sit outside of the STF:

There were several other subthemes that emerged during the interviews but did not fit on the STF, mainly: career selection, perception of primary care, and policy recommendations.

3.5.4.1. Career selection:

Sixteen participants discussed their career selection of primary care. Among the nine Kuwaiti interviewees, two females chose primary care because it was their main interest. Two others chose primary care purely for familial reasons and one for working hours. One male cited that he chose primary care by excluding other specialty options, and one wanted to get promoted financially. Among non-Kuwaiti participants, two also chose

it because of their interest in the field, three because of familial issues, and one female considered it as a transition state while finishing her specialization exams.

3.5.4.2. Perceptions of family medicine/primary care:

Six interviewees, four who were non-Kuwaitis, discussed the perception of primary care in the community. Four participants said that the community valued and trusted hospital specialities more than primary care doctors. Two non-Kuwaiti interviewees suggested that doctors working in the hospital specialities and chronic diseases clinic were more respected because of knowledge and type of cases treated.

> *"Actually I was a student in the Faculty of Medicine in University of Kuwait. I asked one of the doctors who was a trainee at the hospital. I asked him what do you plan to do after being a trainee? He said of course I'm going to go for anything in the hospital, paediatric, for medicine, whatever I find better for me after I finish my internship and I asked him why not polyclinic, he said what you want me to burn my certificate. I will not burn my certificate at a polyclinic So and then I asked him again but why do you think its burning your certificate? Its not I think it's a great job. He said no society will see me as a general doctor. I don't want to be a general doctor."* (Participant 162, non-Kuwaiti, Male, 30 years)

3.5.4.3. Policy recommendations:

The participants suggested several policy changes that they felt could improve the primary care system in Kuwait to make it more attractive and improve doctors' retention. Fourteen interviewees recommended increasing public and community awareness and media support by focusing on the role of primary care, educating patients as to what constitutes an emergency that deserves a visit, and use of antibiotics and other medications. Six interviewees recommended implementing appointment systems for centre visits, and two suggested implementing GPs with special interests as a career path. Four participants suggested recruiting more doctors, two recommended limiting the number of patients per doctor, and one highlighted the need to study the workload and redistribute doctors according to the workload between centres. Three participants suggested establishing a triage room in primary care centres, and two recommended changing the sick-leave system for the population to remove the need for certificates from primary care.

Two non-Kuwaiti interviewees suggested increasing the training courses for doctors and support staff, and one Kuwaiti suggested reducing the duration of the KBFM training. Two Kuwaiti doctors suggested establishing a job description for primary care doctors and two non-Kuwaitis suggested reviewing the non-Kuwaitis

promotion system. Three Kuwaiti doctors recommended major changes to the primary care system by involving the private sector in its management, introducing a fee per visit, or establish a separate organising body for primary care separated from K-MOH. Other less frequently mentioned suggestions were changing duties, reducing working hours, assigning patients to doctors, establishing a reward system, establishing a research and development department to study the field's needs, activate call consultations, change the work according to doctors' seniority, and enhanced communication with the hospitals.

> *"I think community awareness is the main thing, it will play a role and the policies to just enter into the centre it should be different, at least there is payment for the entrance, even for Kuwaiti because the easy access for the centre makes a lot of load of unnecessary consultations. Which is most of the time we face it. Maybe health insurance it will improve the quality of service*" (Participant 80, Kuwaiti, Female, 34 years)

4. Discussion:

4.1. Overview of the results:

Regarding the individual system, age seemed to be more important for non-Kuwaitis in determining career decisions, perhaps because they tended to be older than the Kuwaiti doctors interviewed. Gender was less important as a factor in choosing primary care. Most of interviewees expressed suffering from physical and mental health due to their primary care career, which was also found in the systematic review. Although most participants were interested in other fields, many liked the variety of practice in primary care. However, many expressed their inability to practice the ideal primary care concept, and some cited the cultural view of perceiving primary care as a female field. There were mixed views about doctors' autonomy and clinical restrictions. Burnout and job dissatisfaction, which were associated with GPs' decision to leave in the systematic review, chapter (5), were mainly linked to workload and CPD activities were mentioned as a mitigation factor.

Regarding the social system, Kuwaitis focused on the workload during the KBFM and non-Kuwaitis on their inability to pursue part-time degree programmes. While Kuwaitis acknowledged the role of medical school in shaping their career choices, non-Kuwaitis thought medical school had less influence. All the interviewees highlighted the positive role of CPD in gaining knowledge but demanded dedicated time to attend such activities. Most Kuwaitis had good peer relationships, which was the opposite to non-Kuwaitis, and most interviewees thought professional networks did not support primary care. Almost all participants recognised

the importance of their families in shaping their career decisions, which was also found in the systematic review.

While all interviewees experienced high workload, they had mixed views regarding working hours and nights-on call. Almost all Kuwaitis highlighted the need for implementing an appointment system, but not all non-Kuwaitis supported the idea. Although most interviewees liked the doctor-patient relationships, some stressed increasing patients demands. While Kuwaitis were more satisfied with their work-life balance, both Kuwaitis and non-Kuwaitis agreed that having a career break could improve doctors' retention in primary care. While more non-Kuwaitis were satisfied with their income, more Kuwaitis stressed the importance of achievement-based financial incentives.

Concerning the societal-environmental system, more Kuwaitis thought political decisions were adversely affecting primary care. This might be explained by their knowledge of the country and its political circumstances. All interviewees mentioned the shortage of doctors, and most acknowledged that there is a phenomenon of doctors leaving primary care. Almost all of the participants cited the discrepancy between health districts in terms of working conditions, number of doctors, and the attitude of patients and their demands. Most interviewees mentioned that primary care was perceived as lower status by patients, the public and other doctors, which was also seen in other countries and the results of the systematic review. Participants' policy recommendations focussed on community awareness, establishing an appointment system, and recruiting more doctors.

4.2. Mapping interview data to the STF:

Although using the STF guided the analysis in a systematic way and was beneficial in categorising the data, some of the identified themes could not be mapped onto the STF; conversely, some elements of the STF were not raised in the interviews. For instance, no one discussed issues that mapped to sexual orientation, ability, disability, self-concept, and physical attributes. Similarly, no data were mapped to socioeconomic status, globalisation, and historical trends components of the societal-environmental system.

Several themes emerged that could not be mapped on the STF; for example, in the individual system themes about abuse, autonomy, burnout, and job satisfaction emerged. In the societal system, several subthemes emerged under the workplace component, and professional networks were added to community groups. Other

themes that could not be mapped are community awareness, perception of primary care, and policy recommendations.

4.3. Reflexivity:

In qualitative research, one's own persona can influence both the conduct of the research and the data collected during the interview (Richards and Emslie, 2000). As a male Kuwaiti medical doctor, I had to be mindful of my potential influence on the interviews and the interview process. As a graduate in Kuwait, I was oriented to and understood the Kuwaiti healthcare system. This could be both positive, for example by opening more topics for discussion or reassuring participants – particularly Kuwaitis. It could, however, also have negative aspects. For example, women might not have wanted to discuss issues relating to family or personal life with a man; non-Kuwaitis might have been reluctant to criticise the health system and speak freely about the role of political decisions on their position. It was therefore important to reflect on my role in the interview process. I did this in several ways. The interview guide drew on the results of the systematic review and the survey, to try to avoid bringing in my own biases and preconceptions. Before conducting the interviews, I spent time thinking about how I would introduce myself to each participant and how I might try to identify and allay any concerns they might have. Afterwards, I discussed the interviews with my supervisors and they were involved in the analysis process. Together, I believe that these steps helped to mitigate any undue influence I might bring to the interview process. For example, I found that the female doctors invited to join the study were, generally, likely to accept and during the interviews were not hesitant in expressing their opinions to me.

4.4. Strengths and limitations:

This study has several strengths; firstly, to our knowledge, it is the first study to be conducted in Kuwait that explored the factors affecting primary care doctors' decisions to stay or leave the field. Also, the use of the STF guided the researcher in exploring multiple areas that can affect GPs' retention. Using the results of both the systematic review and quantitative study during the interview identified areas for discussion and comparison to other countries and health care systems.

Limitations included conducting the interviews in English, which was the second language for all of the interviewees, which might have limited their expression of their opinions. A second limitation was the sample size, 20 interviewees; however, there was repetition in the areas discussed by the participants and by the end no new information was coming through the interviews, which is an indication of data saturation. Another

limitation was the hesitancy or refusal of some participants, possibly due either to their unfamiliarity with qualitative research methods or their concerns about the confidentiality of the interviews. For example, despite the reassurance by the researcher of the confidentiality and anonymity of the data, there might be some hesitancy to speak freely by non-Kuwait participants about certain topics, especially political decisions. Although purposeful sampling was used to try to ensure that important groups were included in the research, on the basis of age, gender, health district and nationality, the sample might not be fully representative of the wider population, especially non-Kuwaiti females and Kuwaiti males. This limits some of the interpretation of the findings. Another limitation may have been in relation to the accuracy of the transcribing. Even though professional transcribers transcribed the interviews, some of the interviews' content might not be appropriately transcribed, especially since English was the interviewees' second language. However, this limitation was tackled by reviewing the transcripts and recording by AA and correcting any areas where there was mis-transcribing or gaps.

The use of the STF was immensely beneficial in categorising the themes after initial coding and thematic identification. This helped to identify issues and differences in retention factors for Kuwaiti doctors and those from other countries and allowed a better understanding of whether such issues were situated at the individual, social or societal-environment system. This also allowed factors not included in the STF to be placed into the wider system levels, for example, job satisfaction, autonomy, burnout, workload, and working hours that emerged from the systematic review. Since the STF was not developed for medical workforce research purposes, the framework might miss some themes; however, this limitation was tackled by including all emerging themes, even those not mapped on the STF. A final limitation is a subjective bias by quantifying the interviewees' views, which might not represent the sampled population views. For example, two out of the three Kuwaiti male interviewees were older than 40 years old; therefore, their views might be generalisable to the primary care workforce.

5. Summary:

This chapter discussed the third study of this PhD project, which is the qualitative interviews with primary care doctors in Kuwait. The results showed that career decisions to leave or stay in primary care were influenced by multiple factors at the individual, societal, and societal-environmental levels. These findings are consistent with results in the literature and other studies in this project.

Chapter Eight: Synthesis of Findings and Discussion

1. Introduction:

This chapter will compare and integrate the results of the systematic review, quantitative, and qualitative studies and present them according to the three STF systems. After that, the compatibility and applicability of the STF as a lens to study the recruitment and retention of primary care doctors will be reviewed, and suggestions to develop the STF will be presented. A comparison of the results with the literature will be discussed, and the strengths and limitations of this PhD project will be presented. Finally, future research recommendations and policy implications will be discussed.

2. Synthesis of finding and mapping to STF:

In this section, an overview of the data synthesis method will be presented and a summary of the factors influencing the recruitment, and retention of primary care doctors identified in each of the three studies of this PhD project are presented mapped to the STF, Table 26. In this project, the triangulation protocol was adopted to synthesis the data from the three studies. According to O'Cathain, Murphy, and Nicholl (2010), the term triangulation in mixed-method research is defined as using different methods to study a specific problem to gain complete knowledge about it. Furthermore, the same authors mentioned that the process of triangulation is done through convergence, which is when the data agree on the studied topic, complementarity, when offering complementary information, and discrepancy, which is when there is contradiction or differences in the data. In this project, all of these methods were used in the triangulation process.

Although it is difficult to weight influences on recruitment and retention, it appears that on an individual level, gender, specific work-related, and other values are important recruitment factors; age, job satisfaction, and burnout affect retention. On a social level, medical school exposure to primary care, family circumstances and opinions, working hours and work environment affect recruitment. While CPD enhances GPs' retention, workload, working hours, and lack of professional networks and support jeopardise it. On a higher societal – environmental level, establishing flexible GP contracts can enhance recruitment. Political decisions, such as organisational changes, can both positively and negatively affect GPs' recruitment. Geographical location was among the main factors affecting GPs' retention, in the form of migration or desiring to work in a specific location.

2.1. Individual system:

2.1.1. Gender:

Gender was found to be important in both the systematic review and qualitative interviews. While the systematic review found that more females were choosing primary care as a career, the qualitative study suggested that gender had little or no role. One explanation might be that, in the interviews, the medical and wider community perceived primary care as a female job due to cultural values. Cultural and religious values may have more influence on primary care doctors' career decisions in other settings in the Middle East than in Kuwait. For example, in Lebanon Alameddine *et al* (2016) suggested that more women needed to be recruited to primary care for many reasons including the Islamic culture of women preferring to be seen by female doctors. Even in the UK, Muslim women described challenges in choosing a surgical speciality (Malik *et al.*, 2019).

Table 26 Summary of the Factors Influencing the Recruitment and Retention of Primary Care Doctors

	Systematic Review		Survey - Quantitative	Interviews - Qualitative	
	Recruitment	**Retention**	**Retention**	**Recruitment**	**Retention**
Individual System	• More females choosing PC • Interest linked to choosing PC • Values (doctor-patient relationship and continuity of care) linked to choosing PC • Work-life balance linked to choosing PC • Mixed evidence about the effect of the breadth of knowledge of PC and choosing it as a career. • Job autonomy, availability of leisure time, and positive career prospects linked to choosing PC	• Leaving PC increases with age • Mixed evidence about the effect of gender on retention • Ill health (physical or mental) was linked to leaving PC • Wider interests linked to leaving PC • Values (doctor-patient relationship and serving the community) enhance retention, but the conflict between patient benefit and the availability of funds or meeting targets jeopardise retention. • Work-life balance linked to leaving PC	• Increased satisfaction and morale enhance retention (CS + LR) • Younger participants were more intending to leave (CS); more older doctors intending to work for less than 5 years (CS) and increasing age is associated with intention to work for less than 5 years (LR) • More Kuwaiti doctors planning to work for less than 5 years (LR)	• Gender had no role in choosing PC • PC values (holistic approach, being the first line of contact) enhance recruitment; cultural values and perception of PC as a female job could affect recruitment • Community perception or lack of prestige of PC can adversely affect choosing it as a career	• Age influence on leaving PC for non-Kuwaitis • PC affected the health of GPs and could influence leaving PC • Mixed evidence about the role of knowledge and skills on retention • Implementing PC values (holistic approach, continuity of care) enhances retention • Mixed evidence about job autonomy on retention • Burnout was an acknowledged effect but not on retention • Community perception or prestige of PC can adversely affect retention

		• Burnout, decreased job autonomy, low morale, appreciation and job recognition, and job dissatisfaction were linked to leaving PC			
Societal System	• Mixed evidence about the role of medical school experience and exposure influence on choosing or rejecting PC • Postgraduate training exposure and shorter length linked to choosing or rejecting PC • Negative media image was linked to rejecting PC, indicating the need for media campaigns to improve recruitment • Perception of PC being compatible with family life enhanced	• CPD activities could enhance retention • Mixed evidence about the role of returner schemes on retention • The negative media image of PC is adversely affecting retention • Family responsibilities can negatively affect retention • The availability of supportive professional networks could enhance retention, but peers' relationships could adversely affect retention	• High workload and administrative tasks influence leaving PC (CS) • Longer and inflexible working hours associated with leaving PC (CS) • Qualification in family medicine/ PC linked to intention of working for more than 5 years (LR)	• Medical school can influence choosing PC for Kuwaitis • The family has a role in choosing or rejecting PC • Working hours and night-calls can encourage choosing PC • Some mentioned patient-relationships as a factor for choosing PC	• Access to CPD improved satisfaction • Mixed evidence about the effect of peers on retention • The family has a role in retention • Heavier workload might encourage leaving PC • Working hours and night-calls can encourage leaving PC • Rules and regulations (unavailability appointment system, promotions for non-Kuwaitis) can influence leaving PC • Mixed evidence about the patient-relationships effect on retention

	recruitment; opinions of family members or friends could positively or negatively affect recruitment • The opinions of peers, role models and professional networks could positively or negatively affect recruitment • Mixed evidence about workload and choosing PC • Working hours could positively or negatively affect recruitment • Work environment and conditions could positively or negatively affect recruitment • Doctor-patient relationship enhance choosing PC	• Workload significantly linked to leaving PC • Working hours (inflexible hours, out-of-hours commitments) linked to leaving PC • Work environment and conditions could positively or negatively affect retention • High patient demand linked to leaving PC • Mixed evidence about reimbursements/salaries and leaving PC			• The nature of work (GP with a special interest or just dispensing medications) can enhance or jeopardise retention • Lack of support from management can influence leaving PC • Mixed evidence about the effect of income and financial incentives on retention

	• Mixed evidence about reimbursements/salaries and choosing or rejecting PC				
Societal – Environmental System	• Political decisions (organisational changes, uncertain future of PC, GPs' contracts) negatively affecting choosing it as a career • A flexible working contract could enhance recruitment	• Political decisions (organisational changes) influence leaving PC • The need to change geographical location could adversely affect retention • A flexible working contract could enhance retention	• Higher number of those intending to leave or work for less than 5 years were from districts B or D areas (CS)		• Mixed evidence about the effect of political decisions on retention • The geographical location (health district, migration) can negatively affect retention
Other factors			• Doctors working for less than 5 years were more intending to leave PC (CS), and those working for more than 10 years intending to retire		

Note: PC = Primary care, CPD = Continuous professional development, CS = Chi-Square, D = Descriptive analysis, LR = Logistic regression

2.1.2. Age and health:

All of the studies showed that increasing age was associated with leaving or intending to leave primary care. Although this may be unsurprising as doctors start to think about retirement as they get older, the qualitative study found that non-Kuwaiti doctors emphasized the role of age more than Kuwaitis. This was explained by their career planning and plans to return to their home country and the unavailability of retirement schemes for non-Kuwaitis. Both the systematic review and qualitative interviews also identified ill health as a reason for GPs to leave primary care; this also contributed to the increased intention of leaving among older doctors, who were more prone to health problems (Sansom *et al.*, 2016). GPs' mental health is also negatively affected by work-related burnout (Long *et al.*, 2020).

2.1.3. Values and beliefs:

Both the systematic review and the qualitative interviews showed that certain values, especially about the doctor-patient relationship, could enhance primary care recruitment. However, the same values could negatively affect retention. The interviews identified potential reasons for this, including changes in the organisation and delivery of primary care, such as the increase in patients' knowledge and demands and the need to implementing targets and quotas which conflicted with doctors' values about providing time and care for patients. This tension between meeting performance targets and meeting patient needs has been reported elsewhere, notably after the introduction of the Quality and Outcomes Framework in the UK (Maisey *et al.*, 2008; Mcdonald and Roland, 2009). Negative work-life balance on both recruitment and retention was mentioned clearly in the systematic review, although its effect was less clear in the qualitative interviews. The anticipation and preference of doctors about primary care having a good doctor-patient relationship and work-life balance and how they were changed after working in primary care seemed to play a role in doctors' decisions to stay in primary care.

2.1.4. Job autonomy, satisfaction, and prestige:

The interviews did not identify a clear role for autonomy in promoting GP retention, although the systematic review findings did show that job autonomy influenced recruitment and retention. It is unclear why this is the case, but may indicate that the Kuwaiti system does not promote primary care doctor autonomy as much as other health systems do. Another explanation is that non-Kuwaiti participants in the interviews were cautious in their criticism of K-MOH and the job autonomy, as it might affect their jobs. Job satisfaction was an important factor for retention, in both the systematic review and the survey study, which is similar to existing literature showing that job satisfaction is a mediator of GPs' career intentions, especially their decisions to

leave primary care. The job dissatisfaction among the primary care doctors in Kuwait could be explained by work-related burnout, especially as Abdulghafour et al. (2011) showed high rates of burnout among primary care doctors in Kuwait. The link between job dissatisfaction and burnout was also demonstrated by the studies by Long *et al.* (2020) and Soler et al. (2008). The interviews showed that community perception and the perceived low prestige of primary care also negatively affects recruitment and retention.

2.2. Social systems:

2.2.1. Education & media:

Evidence on the effect of education on recruitment and retention was seen in all of the studies. While the systematic review showed mixed evidence about the effect of medical school on recruitment, the qualitative interviews identified medical school as having an effect, especially among Kuwaiti doctors. However, this result was related to Kuwaiti doctors attending a specific medical school in Bahrain, and so cannot be generalised. This does fit, however, with work showing that medical school approaches and the extent to which students are exposed to general practice and primary care can enhance recruitment to the field (McDonald *et al.*, 2016; NHS - Medical School Council, 2016; Alberti *et al.*, 2017) . One important finding was that access to CPD activities improved retention this was explained by an improvement in doctors' satisfaction in gaining new knowledge and having time away from the routine of everyday work. The survey found a relationship between having a qualification in family medicine and intending to remain in primary care, although this was not raised in the interviews. Only the systematic review identified the detrimental effect of negative media reporting on both recruitment and retention, which might be explained by the different media attitudes and priorities in Kuwait. Certainly, other studies have shown that poor media representation of primary care is a challenge and needs to be addressed (Tanner, Foy and Harrison, 2010; Foster *et al.*, 2019). However, this might also link to the views about lack of prestige in primary care and would be worth further investigation.

2.2.2. Family, peers, and professional networks:

Both the systematic review and the qualitative study identified the important effect of family on recruitment, particularly through the perception of primary care being compatible with family life or family members' opinion, which can be seen as the classical and traditional perception of the primary care field as having less workload and good working hours. Such perceptions also show the role of anticipation of primary care job and how this is changed after joining it. Both empirical studies also found that retention could be adversely affected by family responsibilities. Again, this was explained by the changes in primary care that resulted in increasing the workload, administrative workload, and working hours. While the qualitative study presented mixed

evidence in terms of the effect of peers on retention, the systematic review showed that peer relationships and opinions could affect GPs' recruitment and retention.

2.2.3. Workload, working hours, and financial factors:

All three studies showed that high workload influenced GPs' decision to leave primary care, with longer, inflexible, and out-of-hours working hours negatively affecting retention. These findings on the role of workload and working hours might be explained by doctors' presumptions about primary care as an easier choice than hospital careers before joining it and then being faced by the reality of working conditions in the field (Wass and Gregory, 2017), which reinforces the previously mentioned notion about the role of the anticipated picture of primary care career and its role in retention. Another explanation might be that the changes in the primary care field and the increase in GPs' commitments over time impacted so much on primary care doctors that they are now considering leaving. The current evidence, from the review and from the interviews, found there was no clear role for financial incentives or increasing salaries to improve retention and mixed evidence was demonstrated by the systematic review on recruitment. This suggests that there is more going on in primary care doctors' lives and working circumstances and that increasing financial rewards alone will not improve retention.

2.2.4. Working environment and patient-relationships and demands:

The systematic review showed that the working environment could positively or negatively affect both recruitment and retention. The effect of working conditions on retention was also mirrored in interviews, in which rules and regulations, nature of the work, and lack of support from management can adversely affect GPs' retention. In both the systematic review and the qualitative study, recruitment was enhanced by the doctors' passion for interacting with, and caring for, patients. While the increase in patient demands was cited as an influencing factor for leaving primary care in the systematic review, the interviews showed the effect of patient demands on retention was not clear-cut. This might be explained by the different approach taken by primary care doctors in Kuwait, in which some of them mentioned they were obliged to follow the patients' needs as ordered by their superiors, even if they are not convinced to do so was the right thing to do. One such important issue that arose in the interviews was the need for patients to obtain a sickness certificate from a primary care doctor, even if they have only been ill for one day. This appeared to be a major driver of patient demand. Addressing this could reduce conflicts between doctors and patients.

2.3. Societal-environmental system:

2.3.1. Political decisions:

Both the systematic review and interviews identified the effect of political decisions on recruitment and retention. While the systematic review showed a clear effect of political decisions, which could be positive or negative, the interviews showed mixed evidence about their effect on recruitment and retention amongst doctors in Kuwait. Several factors can explain these results; initially, the Kuwait political atmosphere was different from other countries, wherein some people might feel unable to fully express their opinions. This was supported by the fact that most non-Kuwaiti participants in the interviewees thought political decisions did not affect retention, which might also be explained by their unfamiliarity with Kuwait's political atmosphere. Another important aspect is the different medico-political environment in Kuwait compared to the UK. Most of the studies included in the systematic review were from the UK, which has experienced many more changes in primary care and doctors' contracts compared to Kuwait.

2.3.2. Geographical location:

All three studies showed evidence related to the effect of geographical location on GPs' retention. In the systematic review, the need to change geographical location had an adverse effect on retention, with moving often due to familial reasons. The survey showed that more doctors from specific districts in Kuwait were intending to work for less than five years, and the interviews demonstrated that migration and disparities in health districts' work conditions negatively affected retention. The evidence in the systematic review is mainly linked to changing geographical location due to familial reasons, which is the same case in the interviews regarding the intention of migration mainly for familial reasons. The main geographical aspect affecting GPs in Kuwait was the disparity between health districts in resources, number of doctors, and as a result, workload. Thus, despite Kuwait's small geographical area, such differences can be seen with the same lens as the differences between rural and urban areas in larger countries, especially in terms of the concentration of resources in the capital area and its health care facilities (Dong *et al.*, 2020).

3. Applicability and potential improvement on STF:

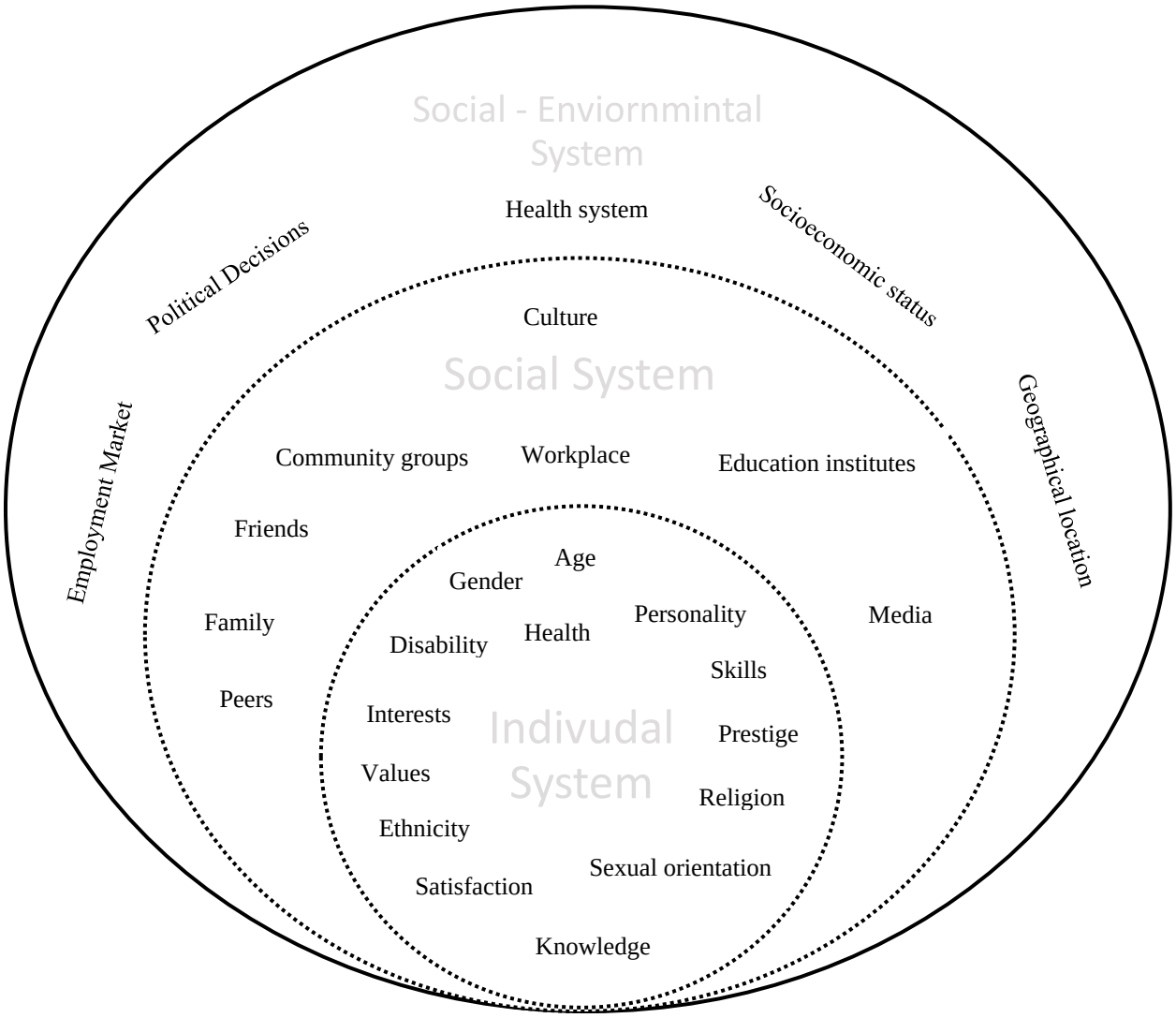
Using the STF was of great benefit and importance to this PhD project. As mentioned earlier in chapter (4), the STF is described as a metatheoretical framework covering many career theories. This provided a good platform for understanding, categorising, and analysing the factors affecting GPs' recruitment and retention in general and in Kuwait. Besides identifying the factors that might affect recruitment and retention, the three inter-related systems of the STF helped organise those factors. The STF also provided a lens to understanding

the relations between the factors affecting recruitment and retention and the weight or power of those factors on individual or system levels.

The framework also highlighted areas that were not identified in any of this PhD's studies, in particular the role of sexual-orientation, ethnicity, personality, self-concept, and socioeconomic factors on GPs' recruitment and retention. Despite the lack of evidence in this project, the role of personality (Borges and Savickas, 2002; Mehmood *et al.*, 2013; Chang *et al.*, 2019) and sexual orientation (Etringer, Hillerbrand and Hetherington, 1990; Sitkin and Pachankis, 2016; Winderman, Martin and Smith, 2018) were shown in some studies to affect career choices. Similarly, other studies have identified the effect of ethnicity on career choices (Esmail and Everington, 1993; Fouad and Byars-Winston, 2005; Iacobucci, 2020). Although the issue of ethnicity was not explicitly discussed, in the qualitative interviews some of the work-related conditions being experienced by non-Kuwaiti doctors might need to be addressed and further researched. Although issue of pay and remuneration was raised, no evidence was found to socioeconomic status to career choice, which is different to some of the studies that linked it to career choice (Senf, Campos-Outcalt and Kutob, 2003). In addition, the STF identified some elements that, currently, were less well addressed in the medical field compared to other fields, such as globalisation and historical trends; but that will not exclude their effects as factors. For example, travelling for electives or training have influenced career decisions among those who participated (Heimburger *et al.*, 2015).

However, since the STF was not developed with the medical profession in mind, we found some shortfalls and gaps as well. Initially, the STF did not include the healthcare system, which encompasses several important factors mapped under the workplace, such as rule and regulations, salaries and financial incentives, political decisions, and the employment market. Also, there is a degree of repetition in some elements, such as values and beliefs and there is a mention of spirituality but not included as an element in the figure, which in some settings – such as Kuwait - may be important. Therefore, by the end of this PhD project, we have suggested an adapted framework tailored to the healthcare system and research, Figure 18.

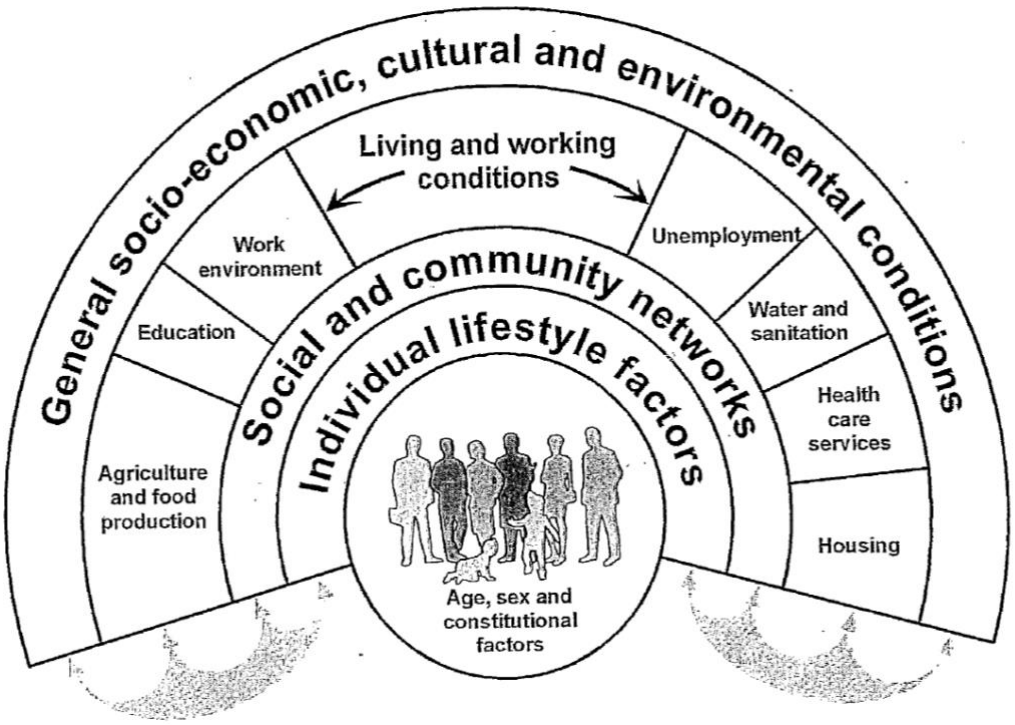
Figure 18 Adapted System Framework for Healthcare Professionals Careers



The design of the figure is inspired by the social determinants of health framework developed by Dahlgren and Whitehead (1991), Figure (19), as it is well known and widely used in healthcare research. We used the incomplete lines between the three systems to indicate the connections between the different systems. Regarding the individual system, this PhD project showed that age, gender, interests, values, health, knowledge, skills, and prestige affect career choice. An important aspect that should be added as part of values is the role of religion, which was mentioned by some participants in this qualitative study. This may, of course, be due to the setting of the qualitative work where religion may be considered more carefully than in other parts of the world. It is, nonetheless, worth considering especially when we consider the movement of doctors and other health care professionals from one country or region to another.

Although self-concept is one of the elements of the STF and a cornerstone for many psychological and developmental career theories, we chose to omit it from the suggested framework. As mentioned earlier, self-concept is an individual's opinion about their role in a job or mental representation of themselves (Hartung, 2013). Self-concept is also a continuously changing developmental concept and is affected by several personal and social factors (Gottfredson, 2002; Patton and McMahon, 2014). It can be argued that factors such as personality, interests, values, culture, socioeconomic status, and family can all shape an individual's self-concept. In this PhD, there was no evidence found for the role of self-concept in formulating career decisions.

Figure 19 Social Determinants of Health Framework, Reproduced From (Dahlgren and Whitehead, 1991)



In terms of the social system, friends were added as an important influencer on career decisions, based on the findings of this PhD. Other work, as well as the findings presented here, has previously identified the role of family in influencing career decisions (Blades *et al.*, 2000; Evans, Lambert and Goldcare, 2002; Buddeberg-fischer *et al.*, 2006; Lambert *et al.*, 2012; Roos *et al.*, 2014; Lambert, Smith and Goldacre, 2017; Marchand and Peckham, 2017). However, findings from this work also found that how friends view primary care was important to our interviewees and was also identified in the systematic review. Indeed, friends as a factor was included the explanation of the STF under the peers element (Patton and McMahon, 2014), but not included as a factor on its own. However, we thought it essential to include it in the model as it showed its importance in influencing career decisions.

Another important addition to the framework is the health system element in the social-environmental system. According to the WHO (2010), a health system:

> *"consists of all the organizations, institutions, resources and people whose primary purpose is to improve health …… A health system needs staff, funds, information, supplies, transport, communications and overall guidance and direction to function"* (P.VI)

As mentioned in the same report, a health system has six building blocks: service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance. These building blocks are the components of the suggested health system element of the societal-environmental system. Findings from all three studies in this PhD identified important elements of the health system which influenced both recruitment, but particularly retention decisions. Patient demand as a result of health system requirements (the need for sick leave certification being a good example), increasing workload to meet changing rules and regulations, requirements for on-call work, and political leadership were all identified as important. Conversely, supporting the health workforce through access to CPD or flexible working made it more likely that family doctors would stay. This all pointed to the importance of including health system at the societal-environmental level.

Such an addition will cover several factors affecting health professionals' recruitment and retention, especially as the building blocks were used previously in health research and in assessing health systems. Satisfaction is an overarching element that covers all of the systems in the framework, as it was shown to affect career decisions and is affected by factors from all of the system such as knowledge, media, and political decisions. However, it was placed in the individual system because it can be seen as a self-measuring factor that can be evaluated by the individual.

4. Personal Reflection:

I view the duration I spent doing my PhD as a journey that began at the end of 2016. During it I learned many things and faced several hurdles. From a learning perspective, I have gained a lot not only through the lectures, seminars, courses, and conferences but also through knowing and connecting to my colleagues in the department and the university and through the guidance of my supervisors. Of course, the living experience in a different country with a different culture had also provided me with huge insight from which I gained a lot.

However, I faced some hurdles during the journey. Although many colleagues and friends helped me settle in quickly and I did my Master's in London, the living experience away from my family was not easy. Conducting the research in Kuwait was also challenging, as some of the information and data which could have been helpful in setting the wider context of primary care are not available or difficult to obtain. I had to distribute and collect the questionnaires in person, and the concept of qualitative research not well understood. Another challenging issue was discussing some political, cultural, and religious topics, which I felt that some participants were hesitant to talk about, especially during the interviews. The effects of the current pandemic cannot be underestimated, I have spent a long period during the lockdown in Glasgow.

I am a Kuwaiti, male, medical doctor who worked in several clinical and administrative departments in K-MOH. All of these factors played a role during my PhD journey. Being oriented and familiar with the health system helped conduct the research and shorten the time needed for some of the paperwork that needed to be completed. It also gave me insight about the research topic and some of the factors that might affect the recruitment and retention of primary care doctors in Kuwait. Personal communication with the participants during interviews and primary care centres managers or deputy managers also helped gain their trust and go forward with research. However, being a Kuwaiti might have discouraged some non-Kuwaiti participants to speak freely about political issues.

In the end, it was not an easy journey, but I am happy and satisfied with my work, and I feel blessed that I had my PhD in such a supportive environment.

5. Strengths & limitations:

Since the strengths and limitations for each of the systematic review, quantitative, and qualitative studies were discussed in relevant chapters (5, 6, 7), this section will present the strengths and limitations concerning this PhD as a whole. This is the first project of its kind to be conducted in Kuwait that investigated the recruitment and retention of primary care doctors using a mixed-methods approach. Using a mixed-methods approach allowed rich and comprehensive data about the recruitment and retention of primary care doctors to be gathered, first by surveying the views of almost all primary care doctors working in Kuwait at that time, then by exploring in-depth the views of both Kuwaiti and non-Kuwaiti doctors. The systematic review presented a foundation on which to base the empirical work. While the survey captured primary care doctors' career intentions, the interviews presented detailed and personal perspectives about doctors' career intentions. The

triangulation of data in this chapter showed the depth of data and allowed for generalisation of results in suggesting a modified systems framework for healthcare career decisions.

The use of the STF is also strength as it allowed the exploration of multiple factors that might affect recruitment and retention, and identified how these are inter-related. It also revealed some gaps in the literature regarding the effect of other factors which may also be important. The STF also allowed the data to be systematically analysed and eased the process of triangulation.

In terms of limitations, the researcher's unfamiliarity with qualitative studies can be seen as a limitation; however, this was tackled by attending numerous courses at the University of Glasgow, and other universities in the UK and the researcher was helped and guided by both supervisors. Another limitation was the lack of awareness of qualitative research as a methodology among participants, which discouraged some to participate. Some interviews were quite short and perfunctory, however growing experience in interviewing and the use of prompts helped ensure that participants opened up about their experiences. Not all of the primary care workforce data were available, especially regarding those who left the clinical field. The limited time frame and resources were other hurdles to the data collection process, as it was conducted in summer and Hajj periods, when many doctors were on leave, and the latter was a public holiday period. A limitation that might have affected the data synthesis and interpretation of findings is the fact that most of the studies in the systematic review were from non-Middle Eastern countries. However, many of the factors identified were applicable to health systems generally and it also highlighted areas to explore in both the quantitative and qualitative studies, e.g., the impact of culture and the experiences of non-Kuwaiti doctors. The results from both the survey and the interviews showed that the factors affecting recruitment and retention in Kuwait are mostly similar to those in other countries. However, as both the survey and interviews focused more on retention, it has to be acknowledged that these studies may have missed important recruitment-related factors.

6. Recommendations for policy:

This project found that the challenges facing the recruitment and, in particular the retention, of primary care doctors in Kuwait are related to educational factors (exposure to primary care during medical school, CPD activities, educational chances available to non-Kuwaiti doctors), work conditions (workload, working hours, work-life balance, organisational changes), and resource distribution and financial incentives. The recommendations in each section will be ordered according to their importance:

Education:

- Consideration should be given to increasing exposure to primary care in the medical school curricula in Kuwait by, for example, increasing the amount of teaching and clinical rotations in primary care.
- Non-Kuwaiti doctors should also be provided with more educational and CPD opportunities in primary care.
- CPD activities appear to have an important and positive effect on primary care doctors' intentions to remain in practice. It is therefore recommended that CPD activity should be increased and that these activities are free of charge, conducted within the primary care centre, or that doctors are given teaching days free from clinical or administrative commitments.

Working conditions:

- There is an urgent need to review workload in order to reduce both clinical and administrative workload.
- The reduction of working hours and night-on call duties, would also improve primary care doctors' work-life balance and make primary care a more attractive career option
- Changing the law in relation to the issuing of sick leave notices is also recommended, as this will have a positive impact on workload, and job satisfaction.
- Consideration should be given to developing and implementing GP with a special interest role, as the evidence from this project indicates that it can enhance primary care doctors' retention.
- This work has identified several organisational changes that could improve the doctor-patient relationship, provide the continuity of care and enhance retention. A particular recommendation is the introduction of appointment systems into primary care in Kuwait.
- Clear job descriptions for the role of primary care doctors are also recommended

Resource distribution:

- Consideration should be given to the implementation of a financial incentives system, which could be linked to workload or clinical achievement.
- There is a need to review the distribution of doctors and resources across the Health Districts of Kuwait and to consider a more equitable distribution according to population size or need.
- There is also a need to scale up the workforce, both of doctors and administrative staff to meet patient needs and demands.
- Careful consideration should be given to the scale of future organisational change, as too much change appears to impact on recruitment and retention.

- More attention should be given to the availability of data to researchers and the public, easing the procedure for conducting research in Kuwait, and engaging more doctors in research activities.

7. Future research recommendations:

This project has identified several gaps in the literature in general and concerning Kuwait in particular:

- Since this project is the first of its kind to explore the recruitment and retention of GPs in Kuwait, the effect of several factors needs to be further studied, such as the role of new rules limiting leaving primary care for administrative positions.
- Other factors that need to be studied in Kuwait are the satisfaction levels of primary care doctors working in administrative positions and their intentions to return to the clinical field.
- Another area of research could be around the opening of a private sector insurance company in Kuwait, its effect on the employment market and if career intentions are different in this parallel health care system compared to those working in K-MOH.
- It would be interesting to examine doctors and patients' satisfaction in the few newly developed appointment-based clinics.
- There is a clear need to study the patient experience in primary care in Kuwait using patient surveys or qualitative methods.
- New studies should focus on the role of ethnicity, sexual orientation, personality, and socioeconomic factors on GPs' recruitment and retention.
- A healthcare focused career framework should be established and evaluated. This could help in research and address the health workforce challenges being faced by several health systems globally.
- Further research might be needed to focus more on primary care doctors' recruitment process, their experience of the process and ways to improve it.

8. Conclusion and Summary:

This PhD project studied the recruitment and retention of GPs with a special focus on Kuwait. This final chapter presented the strengths and limitations of this project, policy implications, and future research recommendations. Synthesising and integrating the results of the studies in this project showed that GPs' recruitment and retention is a multi-factorial phenomenon that needs to be assessed and tackled in a systematic approach. The three studies showed the importance of individual factors, such as gender, age, values, and satisfaction and morale. This project also identified the important roles of family, workload and working hours, and educational factors such as exposure to primary care in medical school and CPD activities on GPs'

recruitment and retention. In addition, the roles of higher societal-environmental factors such as political decisions in the form of continuous organisational changes, employment market factors, such as shortage of primary care doctors, and geographical location factors are essential factors affecting recruitment and retention.

This project, especially the systematic review, showed the literature gaps in examining the role of personality, sexual orientation, ethnicity, and socioeconomic status on primary care doctors' recruitment and retention. There is also scarcity in the studies examining recruitment and retention in Middle Eastern countries, which this work begins to address. In terms of the contribution of this project, to our knowledge, this is the first project to examine recruitment and retention in Kuwait. With a particular focus on recruitment, it has highlighted some important issues that need to be considered if the non-Kuwaiti workforce, which comprised 60% of all primary care doctors in Kuwait, is to be retained. It also identified some of the issues pertinent to Kuwaiti women working in primary care. The work presented here could be the foundation of future research and policy decisions in Kuwait to improve the primary care work environment, especially in terms of the difference between Kuwaiti and non-Kuwaiti workforce. Also, the use of the STF and its adaptation might open the door for future research developing a health research-oriented framework examining medical careers.

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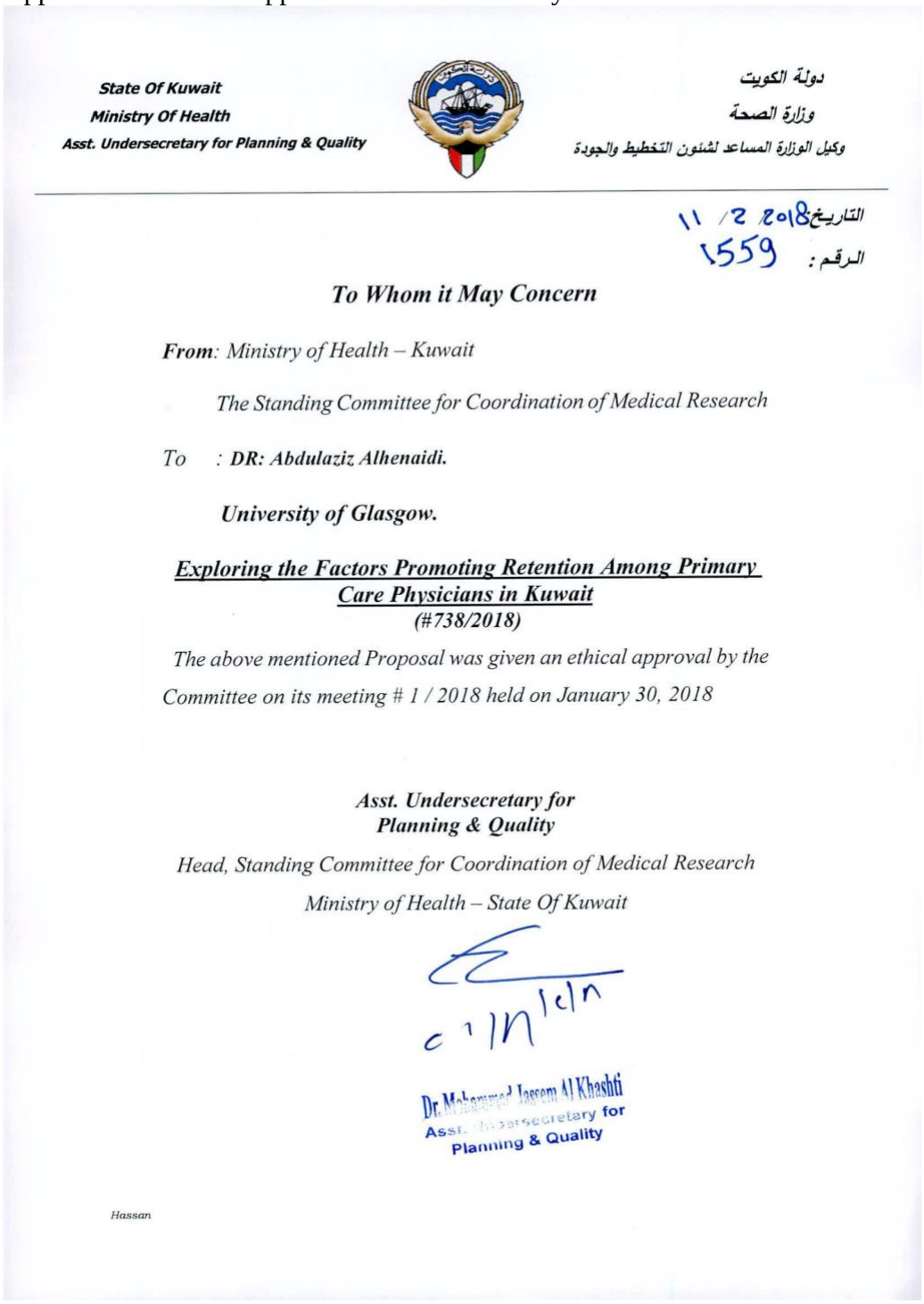
Appendices

Appendix 1 Ethical Approval - Kuwait Ministry of Health



State Of Kuwait
Ministry Of Health
Asst. Undersecretary for Planning & Quality

دولة الكويت
وزارة الصحة
وكيل الوزارة المساعد لشئون التخطيط والجودة

التاريخ 11/2/2018
الرقم : 1559

To Whom it May Concern

From: Ministry of Health – Kuwait

The Standing Committee for Coordination of Medical Research

To : **DR: Abdulaziz Alhenaidi.**

University of Glasgow.

Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait
(#738/2018)

The above mentioned Proposal was given an ethical approval by the Committee on its meeting # 1 / 2018 held on January 30, 2018

Asst. Undersecretary for Planning & Quality

Head, Standing Committee for Coordination of Medical Research

Ministry of Health – State Of Kuwait

Dr. Mohammad Jaseem Al Khashti
Asst. Undersecretary for
Planning & Quality

Hassan

Appendix 2 Ethical Approval - Kuwait Ministry of Health

State of Kuwait
Ministry of Health
Asst. Undersecretary
for Planning & Quality

دولة الكويت
وزارة الصحة
وكيل الوزارة المساعد لشئون
التخطيط والجودة

426 المرجع :

3/2/2019 التاريخ :

To Whom it May Concern

***From**: Ministry of Health – Kuwait*

The Standing Committee for Coordination of Medical Research

*To : **DR: Abdulaziz Alhenaidi.***

University of Glasgow.

Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait
(#738/2018)

The above mentioned Proposal was given an ethical approval by the Committee on its meeting # 1 / 2019 held on January 30, 2019

The research will be conducted in in MOH Hospitals and Primary Health Care Centers.

Asst. Undersecretary for
Planning & Quality

Head, Standing Committee for Coordination of Medical Research

Ministry of Health – State Of Kuwait

Dr. Mohammad Jassem Al Khashti
Asst. Undersecretary for
Planning & Quality

د/ محمد جاسم الخشتي
وكيل الوزارة المساعد لشئون
التخطيط والجودة

P.O. Box : (5) 13001 Safat, State Of Kuwait
Tel.: 24622230/24622228 - Fax : 24866514

ص. ب. (٥) الرمز البريدي ١٣٠٠١ الصفاة، الكويت
تلفون: ٢٤٦٢٢٢٣٠/٢٤٦٢٢٢٢٨ - فاكس : ٢٤٨٦٦٥١٤

Appendix 3 Ethical Approval – University of Glasgow

University of Glasgow

03/04/2018

Dear Prof O'Donnell,

MVLS College Ethics Committee

Project Title: Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait
Project No: 200170105

The College Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. It is happy therefore to approve the project, subject to the following conditions:

- Please insert an estimate of time, rather than stating a modest amount if time in participant information.
- Project end date: End April 2019
- The data should be held securely for a period of ten years after the completion of the research project, or for longer if specified by the research funder or sponsor, in accordance with the University's Code of Good Practice in Research: (http://www.gla.ac.uk/media/media_227599_en.pdf)
- The research should be carried out only on the sites, and/or with the groups defined in the application.
- Any proposed changes in the protocol should be submitted for reassessment, except when it is necessary to change the protocol to eliminate hazard to the subjects or where the change involves only the administrative aspects of the project. The Ethics Committee should be informed of any such changes.
- You should submit a short end of study report to the Ethics Committee within 3 months of completion.

Yours sincerely

Jesse Dawson
MD, BSc (Hons), FRCP, FESO
Professor of Stroke Medicine
NRS Stroke Research Champion / Clinical Lead for Scottish Stroke Research Network
Chair MVLS Research Ethics Committee

Institute of Cardiovascular and Medical Sciences
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Room M0.05
Office Block
Queen Elizabeth University Hospital
Glasgow
G51 4TF
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jesse.dawson@glasgow.ac.uk

Appendix 4 Consent form for Quantitative study

Project Number: 200170105
Subject Identification Number:

CONSENT FORM

Title of Project: Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait – (Phase 1 – Survey)

Name of Researcher: Abdulaziz Alhenaidi
Please initial box

I confirm that I have read and understood the information sheet dated (3/4/2018) for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights being affected.	☐
I understand my information will be stored for additional future research and I will not be able to be identified from any analyses performed by approved researchers.	☐
I agree to my anonymised data being archived and that electronic versions of these will be stored on a password protected University of Glasgow computers for 10 years.	☐
I agree to receive emails about the final study report or any study related updates	☐
I agree to take part in the above study.	☐

Name of subject	Date	Email	Signature

Researcher	Date	Signature

Appendix 5 Consent form for Qualitative study

Project Number: 200170105

Subject Identification Number:

Serial Number:

CONSENT FORM

Title of Project: Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait – (Phase 2 – Interviews)

Name of Researcher: Abdulaziz Alhenaidi

1.1.2	**Please initial box**
I confirm that I have read and understood the information sheet dated (3/4/2018) for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights being affected.	☐
I agree to my anonymised data being archived and that electronic versions of these will be stored on a password protected University of Glasgow computers.	☐
I understand my information will be stored for additional future research and I will not be able to be identified from any analyses performed by approved researchers.	☐
I understand that if some of my views are quoted in a report or published papers, this will be done in a way that ensures that I cannot be identified.	☐
I understand that, subject to my permission, the interview will be audio recorded for the purpose of the study and that any recordings will be destroyed at the end of the study. Depersonalised transcripts of the recordings will be kept for a period of 10 years to ensure accurate reporting in any future publications.	☐
I agree to receive emails about the final study report or any study related updates.	☐
I agree to take part in the above study.	☐

Name of subject	Date	Email	Signature
Researcher		Date	Signature

Appendix 6 Participant information sheet

PARTICIPANT INFORMATION SHEET

1. **Study title**

   Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait.

2. **Invitation paragraph**

   You are being invited to take part in the **(Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait)**, which is a Doctor of Philosophy (PhD) project undertaken in the Institute of Health and Wellbeing at the University of Glasgow. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

3. **What is the purpose of the study?**

This project aims to identify the factors affecting the retention of primary care doctors in Kuwait. The project will involve two phases. The **first phase** aims to identify the career intentions of currently practising primary care doctors regarding leaving or staying in clinical practice, which will be conducted through using a survey tool and qualitative interviews. The **second phase** goal is identifying motivators of leaving primary care among qualified Kuwaiti primary physicians who have left clinical practice, which will be done by conducting qualitative interviews. The study will last for approximately one year, starting from first of April 2018 to the end of April 2019.

4. **Why have I been chosen?**

You have been identified as a member of Kuwaiti primary care workforce. Your views will help us to better understand the factors in play in terms of increasing or decreasing retention of primary care physicians in Kuwait.

5. **Do I have to take part?**

It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time and without giving a reason.

6. **What will happen to me if I take part?**

If you are participating in phase one of the project, you will be asked to fill a questionnaire, which aims to identify the career intentions of currently practising primary care physicians. For a deeper understanding, phase one participants have the choice of enrolling in the interviews that follow the survey; however, phase two consists of interviews only. If you do agree to take part in either of phase one or two interviews, you will be asked to meet with a researcher for an interview at a time and location suitable for you. The interview is expected to last for around 60 minutes. You will be asked at the beginning of the interview if you have any questions about the study, and you will then be given a consent form to complete and sign (you will be given a copy of this information sheet and your consent form to keep).

With your permission, we will record the interview to ensure that we retain an accurate account of the discussion. If you do not wish the interview to be audio recorded, please indicate this to the researcher and omit this part of the consent form. All recordings will be held on secure University of Glasgow servers and will be destroyed at the end of the study. Interviews will be transcribed and anonymised; this will be stored for 10 years after the study ends, according to UK data protection regulation.

7. **What are the possible disadvantages and risks of taking part?**

Taking part in either phase one or two of this project will require you to give a modest amount of your time.

8. **What are the possible benefits of taking part?**

You will receive no direct benefit from taking part in this study. The information that is collected during this project will give us a better understanding of factors promoting retention of primary care physicians in Kuwait and the motivators o leaving clinical practice. Additionally, your views might be helpful in informing policymakers in improving primary care service in Kuwait.

9. **Will my taking part in this study be kept confidential?**

All information which is collected about you, or responses that you provide, during the course of the research will be kept strictly confidential. When we use the information provided by you, from the interviews or questionnaires, it will be anonymised and depersonalised. No names or identifiable data will be mentioned if we quote something that you say in future reports or publications. You will be identified by an ID number, and any information about you will be removed so that you cannot be recognised from it.

However, some participants may be easier to identify due to their unique or role or profile. In recognition of this, quotes that may be attributable to a participant due to their unique or key role will not have a role identifier attached, and if this is not sufficient to ensure anonymity, then these quotes will not be used.

Please note that assurances of confidentiality will be strictly adhered to unless evidence of serious harm, or risk of serious harm, is uncovered. In such cases, the University may be obliged to contact relevant statutory bodies/agencies.

10. **What will happen to the results of the research study?**

The results from both of the questionnaires and interviews will be used to fulfil the requirements of a PhD at the University of Glasgow. Additionally, the results might be published in academic journals and presentations at conferences. Anonymised data will be store electronically at the University of Glasgow for a period of 10 years, to fulfil data regulation requirements.

11. **Who is organising and funding the research?**

There is no direct funding for this research. The PhD is funded by the Kuwaiti Commission of Civil Service and is undertaken and supervised by the Department of General Practice and Primary Care at the University of Glasgow.

12. **Who has reviewed the study?**

This study has been reviewed by the University of Glasgow, College of Medical, Veterinary and Life Sciences Ethics Committee and Ethics Committee in The Ministry of Health in Kuwait.

13. **Contact for Further Information**

If you would like further information about this study, please contact Dr Abdulaziz Alhenaidi. Email: a.alhenaidi.1@research.gla.ac.uk ; Tel: +44 (0) 7949549537 - +965 99833674.

Thank you for taking part in this study!

Appendix 7 Systematic review search strategy

Database: MEDLINE, Host: Ovid, Hits: 2369, Date: From 1946 to April week 2 2017 (22-4-2017)

1. exp Employment/
2. "employment status".tw.
3. "employment termination".tw.
4. "labor force".tw.
5. "Labour force".tw.
6. "occupational status".tw.
7. "recruit*".tw.
8. exp Job Satisfaction/
9. exp Burnout, Professional/
10. exp Workload/
11. (reten* or retain*).tw.
12. exp Personnel Turnover/
13. exp Career Mobility/
14. exp Career Choice/
15. (career* adj5 (change* or interrupt* or break* or leav* or pattern* or decision*)).tw.
16. "long absence".tw.
17. exp Primary Health Care/
18. exp Family Practice/
19. exp General Practice/
20. exp Health Personnel/
21. exp Physicians, Family/
22. exp Physicians, Primary Care/
23. exp General Practitioner/
24. 1 or 2 or 3 or 4 or 5 or 6 or 7
25. 8 or 9 or 10 or 11
26. 12 or 13 or 14 or 15 or 16
27. 17 or 18 or 19
28. 20 or 21 or 22 or 23
29. 24 and 27 and 28
30. 25 and 27 and 28
31. 26 and 27 and 28
32. 29 or 30 or 31
33. Limit 32 to year (2000-now)

Database: EMBASE 1947-Present, Host: Ovid, Hits: 10044, Date: 26-4-2017

1. exp employment/
2. exp employment status/
3. exp occupation/
4. “employment termination”.tw.
5. “labor force”.tw.
6. “Labour force”.tw.
7. “occupational status”.tw.
8. “recruit*”.tw.
9. exp Job Satisfaction/
10. exp burnout/
11. exp Workload/
12. (reten* or retain*).tw.
13. exp personnel management/
14. exp career mobility/
15. (career* adj5 (change* or interrupt* or break* or leav* or pattern* or decision* or choice*)).tw.
16. “long absence”.tw.
17. exp Primary Health Care/
18. “family practice”.tw.
19. exp General Practice/
20. exp health care personnel/
21. “family physician”.tw.
22. “primary care physician”.tw.
23. exp general practitioner/
24. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
25. 9 or10 or 11 or 12
26. 13 or 14 or 15 or 16
27. 17 or 18 or 19
28. 20 or 21 or 22 or 23
29. 24 and 27 and 28
30. 25 and 27 and 28
31. 26 and 27 and 28
32. 29 or 30 or 31
33. Limit 32 to year (2000-now)

Database: Web of Science Core Collection, Host: Thomson Reuters, Date: 23-4-2017, Hits: 1776

1. Topic: employ*
2. Topic: “employ* status”
3. Topic: “employ* terminat*”
4. Topic: “labor force”
5. Topic: “labour force”
6. Topic: Occupation
7. Topic: recruit*
8. Topic: “job satisfact*”
9. Topic: burnout
10. Topic: “burn out”
11. Topic: workload
12. Topic: reten*
13. Topic: retain*
14. Topic: “personnel turnover”
15. Topic: (career* near/5 (mobolit* or change* or interrupt* or break* or leav* or pattern* or decision* or choice*))
16. Topic: “primary care”
17. Topic: “family practice”
18. Topic: “general practice”
19. Topic: “health personnel”
20. Topic: “family physician”
21. Topic: “primary care physician”
22. Topic: “general practitioner”
23. Topic: GP
24. 1 or 2 or 2 or 3 or 4 or 5 or 6 or 7
25. 8 or 9 or 10 or 11 or 12 or 13
26. 14 or 15
27. 16 or 17 or 18
28. 19 or 20 or 21 or 22 or 23
29. 24 and 27 and 28
30. 25 and 27 and 28
31. 26 and 27 and 28
32. 29 or 30 or 31
33. Limit 32 year (2000-now)

Database: Cochrane Library, Host: Cochrane Collaboration, Date: 24-4-2017, Hits: 42

1. MeSH descriptor: [Employment] explode all trees
2. MeSH descriptor: [Occupation] explode all trees
3. MeSH descriptor: [Personnel selection] explode all trees
4. MeSH descriptor: [Job Satisfaction] explode all trees
5. MeSH descriptor: [Burnout, Professional] explode all trees
6. MeSH descriptor: [Workload] explode all trees
7. retent*.ti,ab,kw (word variations have been searched)
8. retain*.ti,ab,kw (word variations have been searched)
9. MeSH descriptor: [Personnel turnover] explode all trees
10. MeSH descriptor: [Career Mobility] explode all trees
11. MeSH descriptor: [Career Choice] explode all trees
12. (career* near/5 (chang* or break* or decision* or leav* or pattern*or interrupt*)).ti,ab,kw
13. MeSH descriptor: [Primary Health Care] explore all trees
14. MeSH descriptor: [Family practice] explore all trees
15. MeSH descriptor: [General Practice] explore all trees
16. MeSH descriptor: [Health Personnel] explode all trees
17. MeSH descriptor: [Physician, Family] explode all trees
18. MeSH descriptor: [Physician, Primary Care] explode all trees
19. MeSH descriptor: [General Practitioner] explore all trees
20. “GP”.ti,ab,kw (word variations have been searched)
21. #1 OR #2 OR #3
22. #4 or #5 or #6 or #7 or #8
23. #9 or #10 or #11 or #12
24. #13 or #14 or #15
25. #16 or #17 or #18 or #19 or #20
26. #21 and #24 and #25
27. #22 and #24 and #25
28. #23 and #24 and #25
29. #26 or #27 or #28
30. Limit 29 to year (2000-now)

PsychINFO, Host: EBSCOhost, Hits: 631, Date: 24-4-2017

1. DE "Employment Status" OR DE "Self - Employment" OR DE "Unemployment"
2. DE "Personnel Termination" OR DE "Employee Layoffs"
3. TI labor force OR AB labor force OR KW labor force
4. TI Labour force OR AB Labour force OR KW Labour force
5. DE "Occupational Status"
6. TI recruit* OR AB recruit* OR KW recruit*
7. DE "Job Satisfaction"
8. TI burnout OR AB burnout OR KW burnout
9. TI workload OR AB workload OR KW workload
10. TI reten* OR AB reten* OR KW reten* OR TI retain* OR AB retain* OR KW retain*
11. DE "Employee Turnover"
12. DE "Occupational Mobility"
13. DE "Occupational Choice"
14. DE "Career Change"
15. TI ((career* N5 (change* or interrupt* or break* or leav* or pattern* or decision*))) OR AB ((career* N5 (change* or interrupt* or break* or leav* or pattern* or decision*))) OR KW ((career* N5 (change* or interrupt* or break* or leav* or pattern* or decision*))
16. TI long absence OR AB long absence OR KW long absence
17. DE "Primary Health Care"
18. DE "Family Medicine"
19. TI General Practice OR AB General Practice OR KW General Practice
20. TI family practice OR AB family practice OR KW family practice
21. DE "Health Personnel" OR DE "Allied Health Personnel" OR DE "Medical Personnel" OR DE "Mental Health Personnel"
22. DE "Family Physicians"
23. TI primary care physician OR AB primary care physician OR KW primary care physician
24. DE "General Practitioners"
25. TI GP OR AB GP OR KW GP
26. 1 or 2 or 3 or 4 or 5 or 6
27. 7 or 8 or 9 or 10
28. 11 or 12 or 13 or 14 or 15 or 16
29. 17 or 18 or 19 or 20
30. 21 or 22 or 23 or 24 or 25
31. 26 and 29 and 30
32. 27 and 29 and 30
33. 28 and 29 and 30
34. 31 or 32 or 33
35. Limit 29 to year (2000-now

Appendix 8 Systematic reviews studies quality appraisal checklist

Question	Answers			Score
1. Was research question clearly stated?	Yes	Cannot tell	No	
2. Were inclusion and exclusion criteria clearly stated?	Yes	Cannot tell	No	
3. Were searches clearly described?	Yes	Cannot tell	No	
4. Were multiple electronic databases searched and described in the paper?	Yes	Cannot tell	No	
5. Was grey literature/unpublished work searched for?	Yes	Cannot tell	No	
6. Were non-English language papers included?	Yes	Cannot tell	No	
7. Was quality of included papers assessed?	Yes	Cannot tell	No	
8. Were multiple reviewers involved in reviewing and data extraction?	Yes	Cannot tell	No	
9. Was there a clear description of exclusions at each step?	Yes	Cannot tell	No	
10. Was method of synthesis clearly described?	Yes	Cannot tell	No	
11. Were the results clearly presented?	Yes	Cannot tell	No	
12. Global Score	Good	Fair	Poor	

Appendix 9 Qualitative studies quality appraisal checklist

Question	Answers			Score
1. Was there a clear statement of the aims of the research?	Yes	Cannot tell	No	
2. Was a qualitative methodology appropriate?	Yes	Cannot tell	No	
3. Was the research design appropriate to address the aims of the research?	Yes	Cannot tell	No	
4. Was the recruitment strategy appropriate to the aims of the research?	Yes	Cannot tell	No	
5. Was the data collected in a way that addressed the research issue?	Yes	Cannot tell	No	
6. Have ethical issues been taken into consideration?	Yes	Cannot tell	No	
7. Was the data analysis sufficiently rigorous?	Yes	Cannot tell	No	
8. Was there a clear statement of findings?	Yes	Cannot tell	No	
9. Global Score	Good	Fair	Poor	

Appendix 10 Quantitative studies quality appraisal checklist

Question	Answers							
1. Study Design	Randomised Control trials	Cohort	Case-control	Cross-sectional	Survey	Descriptive analysis	Interrupted time series	Other
2. Was the study described as randomised?	Yes				No			
3. If yes, Was the method of randomisation described?	Yes		No		Score			
4. Was the research question clearly stated?	Yes		Cannot tell		No		Score	
5. Was the source of cases identified?	Yes		Cannot tell		No		Score	
6. Are the individuals likely to be representative of the target population?	Yes	Cannot tell		No	Not applicable		Score	
7. What the percentage of selected participants agreed to participate?	80-100%	60-79%	Less than 60%		Cannot tell	Not applicable		Score
8. Were the numbers of individuals at each stage of the study clearly reported and explained	Yes	Cannot tell		No	Not applicable		Score	
9. Was the duration of the study clearly stated?	Yes	Cannot tell		No	Not applicable		Score	
10. Was there any pilot phase, and changes made were clearly explained?	Yes	Cannot tell		No	Not applicable		Score	
11. Where there any efforts to address potential sources of bias?	Yes	Cannot tell		No	Not applicable		Score	
12. Was the analysis method clearly described?	Yes	Cannot tell		No	Not applicable		Score	
13. Global Score	Good	Fair			Poor			

Appendix 11 Mixed method studies quality appraisal checklist

Question	Answers					Score
1. Was there a clear statement of the aims of the research?	Yes		Cannot tell	No		
2. Was a mixed method approach appropriate?	Yes		Cannot tell	No		
3. Was there a clear description of the design for mixing methods?	Yes		Cannot tell	No		
4. Was there a clear description of the sequence of the methods?	Yes		Cannot tell	No		
5. Was there a clear description of the stage at which integration occurred?	Yes		Cannot tell	No		
6. Was there a clear description of how the team worked to integrate methods?	Yes		Cannot tell	No		
7. Was there a clear question answerable by quantitative approaches?	Yes		Cannot tell	No		
8. Was the sampling approach appropriate?	Yes		Cannot tell	No	Not available	
9. Was the source and type of routine data well described?	Yes		Cannot tell	No	Not available	
10. What percentage of selected individuals agreed to participate?	80-100%	50-79%	Less than 50%	Cannot tell	Not available	
11. Was the duration of the study clearly stated?	Yes		Cannot tell		No	
12. Were there any efforts to address potential sources of bias?	Yes		Cannot tell		No	
13. Was the analysis method clearly described?	Yes		Cannot tell		No	
14. Was there a clear question answerable by an RCT?	Yes		Cannot tell		No	
15. Was there a clear description of the randomisation process?	Yes		Cannot tell		No	
16. Was there allocation concealment of the randomisation process?	Yes		Cannot tell		No	
17. Was blinding conducted appropriately?	Yes		Cannot tell		No	
18. What percentage were in trial at the end (loss to follow-up)?	80%+	70-79%	Less than 70%		Cannot tell	
19. Was type of analysis clearly stated?	Yes		Cannot tell		No	
20. Was there a clear question answerable by qualitative approaches?	Yes		Cannot tell		No	
21. Was the qualitative approach appropriate?	Yes		Cannot tell		No	
22. Was there a clear description of the sampling method?	Yes		Cannot tell		No	
23. Was there a clear description of the participants?	Yes		Cannot tell		No	
24. Was there a clear description of data collection?	Yes		Cannot tell		No	
25. Was there a clear description of analysis?	Yes		Cannot tell		No	
26. Global Score	Good		Fair		Poor	

Appendix 12 Example of detailed data extraction form

Paper ID	40542	**Reviewer**	Aziz
Citation	Sansom, A., Calitri, R., Carter, M., & Campbell, J. (2016). Understanding quit decisions in primary care: a qualitative study of older GPs. *BMJ Open*, *6*(2), e010592. http://doi.org/10.1136/bmjopen-2015-010592	**Study's Location (Country & Urban, Rural or Deprived)**	South West of England - Mixed urban and deprived
Aim	To investigate the reasons behind intentions to quit direct patient care among experienced GPs aged 50–60 years		
Study Design	Qualitative – Semi-structured interviews	**Study Focus (Recruitment or Retention)**	Retention
Participants/ Population	23 GPs aged 50–60 years (3 who had retired from direct patient care before age 60, and 20 who intended to quit direct patient care within the next 5 years).		
Method	This study was carried as a part of a larger mixed-methods study investigating the challenges facing the NHS workforce shortages. Recruitment for the qualitative part was during the quantitative part of the study, in which respondents to the questionnaires who were 50-59 years of age and had a likelihood of quitting the direct patient care were invited to the interviews. The interviews were conducted by telephone between January and February 2015. Additional interviews were done in May 2015 who were purposively selected to increase the number of female and 50-55 years old participants.		
Key Findings as Expressed in The Paper + Primary & Secondary Outcome	The analysis identified four key themes: 1- Early retirement is a viable option for many GPs; 2-GPs have employment options other than direct patient care; 3- GPs report feeling they are doing an undoable job; and 4- GPs may have other aspirations that pull them away from practice. As in the result of earlier research, this study showed that, high workload, ageing and health, family and domestic life, and organisational change all influencing GPs' decisions about when to retire/quit direct patient care. In addition, GPs expressed feelings of insecurity and uncertainty regarding the future of general practice, low morale, and issues regarding accountability (appraisal and revalidation) and governance. Suggestions about how to help retain GPs within the active clinical workforce were offered, covering individual, practice and organisational levels.		
Systems Theory Elements			

Individual Factors (gender, values, health, sexual orientation, disability, ability, interests, beliefs, skills, personality, world of knowledge, age, self-concept, physical attributes, ethnicity, aptitudes)	• There was a conflict between age, experience, and value to the profession, in which experienced GPs were valued but there was a fear of being an old doctor (***skills, World of knowledge, and age).*** • GPs also mentioned that they have other options rather than working as a GP, such as being an appraiser, clinical commission lead, advisory committee member, pharmaceutical consultant or in medical school. (***skills***). • GPs also expressed the role of age on their confidence and ability to work, which consequently affect their decision to leave direct patient care (***Age & Ability***). • GPs have mentioned the role of ill-health on the decision of early retirement and want to retire while still healthy (***Health***). • There were similarities between the findings of this study and previous research done in the UK that identified factors promoting early retirement, which were workload, fear of deteriorating health and cumulative workload factors on the health and wellbeing of GPs (***Health***) and desire for more leisure time (***self-concept***) • Policy recommendation by the authors were the recognition of GPs skills (***skills***) and to be appropriately professionally rewarded.
Contextual Factors - Social System (peers, family, media, community groups, workplace,	• GPs mentioned that there was a cultural norm of early retirement, which was influenced by the peers, that encourage early retirement (***peers***). • GPS felt that their workload has increased because of long working days, high and difficult to maintain work pace, and the increased complexity of work in recent years (***Workplace***). • GPs mentioned the contribution of meeting targets and preparing for the Care Quality Commission visits as a part of the high workload (***workplace***). • By focusing on workload, two GPs mentioned the high and unrealistic expectations by the patients (***community groups***).

education institutes)	• Another subtheme was the continues change in several aspects related to GPs work (***workplace***). • There were similarities between the findings of this study and previous research done in the UK that identified factors promoting early retirement, which were workload (***workplace***), fear of deteriorating health and cumulative workload factors on the health and wellbeing of GPs and desire for more leisure time. • Other similarities between the findings of this study and previous research done in the UK that identified factors promoting early retirement, were patients' expectations (***community groups***), desire for more family time (***Family),*** reduced job satisfaction and NHS reform (***workplace***) and partnership issues (***peers).*** • The NHS structure and system came as a subtheme, in which the burden of chasing targets and 'government interference' were perceived as lack of trust in the GPs. Also, the referral procedure became more complex and time-consuming. However, GPS have mixed opinions about appraisal as being beneficial or a waste of time (***workplace***). Participants quotes: • GPs stressed on the role of peers and partnership issues on the decision to leave general practice, in which good relationships showed to promote retention while the bad relationships enhance the decision of leaving. Also, GPs mentioned that the availability of practice manager, reception staff and secretarial support plays a role in their decision to stay in general practice (***peers & workplace***). • Low morale was also mentioned by GPs mainly due to the media negative image (***media***). Participants quotes: • Also, GPs mentioned that they want to spend more time with their family and in their social life. (***Family***) • A Policy recommendation by the authors was to recognize the effects of structural and organisational changes on the GPs workforce (***workplace***) and increase the efforts to help GPs maintain and work-life balance (***Family***) by introducing flexible working hours (***workplace***).
Contextual Factors - Environmental & Societal System	• Some GPs were advised that may have a financial advantage of retirement due to the 1995 NHS Pension Scheme (***socioeconomic status***). • GPs felt that politicians are using the NHS for their benefits and felt threatened by the government proposals and changes, which was described as stressful and demoralising (***political decisions***). Quotes of participants:

(political decisions, historical trends, globalization, socioeconomic status, employment market, geographical location)	• GPs showed concerns about the future of general practice and the current situation of shortages in the workforce (***socioeconomic status & employment market***). Quotes of participants: • There was a similarity between the findings of this study and previous research done in the UK that identified factors promoting early retirement, which was insufficient financial incentive to stay in work (***socioeconomic status***). • Interviewees sensed being a part of political conflict and standing on unsecured professional grounds (***political decisions & employment markets***) • Policy recommendation by the authors were to reconsider the pension arrangement that encouraged GPs for early retirement and better rumination for the professional roles. (***socioeconomic status & employment markets***).

Appendix 13 Final Survey Instrument after piloting

Exploring the Factors Promoting Retention Among Primary Care Physicians in Kuwait – (Phase 1 – Survey)

Your Current Role

1. Are you involved in any roles other than your clinical work as a general family physician or general practitioner, e.g. Administrative roles, training undergraduate or postgraduate students, research, or chronic diseases clinic?

Yes	No

If your answer is (Yes), please continue to question 2, or if your answer is (No) please proceed to question 3

2. In which **other roles** are you currently working, or have previously (within last 5 years) worked in family medicine or general practice? *Please select all that apply*.

	Current	Previous (within 5 years)
Undergraduate student tutor		
Family medicine trainer / Postgraduate tutor / other educationalists		
Family physician and running specialized clinic (e.g. Diabetes / Hypertension)		
Research		
Accreditation and quality roles		
Administrative roles		

Other (please specify)

3. How long have you been working as a family physician or general practitioner in the Ministry of Health? (please count all types of service including any time spent as a family medicine resident, but exclude any career breaks)

Less than 5 years	6 - 10 years	11 – 15 years	16 – 20 years	More than 20 years

4. Please estimate the **TOTAL number of hours** you work in family medicine or general practice in a typical week (including on-call duties hours and administrative work)

Less 20 hours	21 -30 hours	31 -40 hours	More than 40 hours

5. Please estimate the **number of CLINICAL hours** you spend in direct contact with patients per week

Less 20 hours	21 -30 hours	31 -40 hours	More than 40 hours

6. How many **Night** duties do you attend per week?

7. In the past 2 years have the number of hours you work in family medicine or general practice

Increased	
Remained the same	
Decreased	

If your answer is (Decreased) please continue to question 8, or if your answer is (Increased) please proceed to question 9. If your answer is (Remained the same) please proceed to question 10.

8. If in the past 2 years your working hours have **Decreased**, which factors have resulted in this reduction? Tick all that apply.

Family circumstances, e.g. childcare, care for relative	
Poor physical health	
Poor mental health	
Promoted to a higher rank	

Other (Please comment)

9. If in the past 2 years your working hours have **Increased**, what factors have resulted in the increase in your working hours? Tick all that apply

Increased workload	
Assigned to an administrative role	
Assigned to other clinical roles (e, g. running specialized clinics)	

Other (please specify)

Number and Duration of Patients' Visits

10. Over the past 2 years have the **number of patients you had been seeing in general family medicine or general practice clinic** per week:

Increased	
Remained the same	
Decreased	
Don't know	

11. How long are your routine patient visits in the general family medicine or general practice clinic?

12. How long do you think a routine patient visit in general family medicine or general practice clinic should be?

13. If you are attending a specialised clinic, such as diabetes or chronic diseases clinics, how long are your routine patient visits?

14. How long do you think a routine patient visit in a specialised clinic should be?

Job Satisfaction

15.Taking everything into account, how would you describe your **current level of work-related enthusiasm, confidence and discipline**?

Low				High
1	2	3	4	5

16. Over the past 2 years has your level of work-related enthusiasm, confidence and discipline

Increased	
Remained the same	
Decreased	

Please comment:

17. Taking everything into consideration, **how satisfied are you in your work as a family physician or general practitioner**?

Very dissatisfied				Very satisfied
1	2	3	4	5

18. Over the last 2 years has your satisfaction in work as a family physician or general practitioner

Increased	
Remained the same	
Decreased	

Please comment

Career Intentions

19. How many years do you plan to continue working as a family physician or general practitioner?

Less than 5 years	5 – 10 years	11 – 15 years	More than 15 years

20. Comparing your current career plans to your plans 2 years ago, are they:

The same	
Changed	

21. In the next five years do you expect to: *Please select all that apply*

Reduce your hours of clinical work	
Increase your hours of clinical work	
Reduce your management responsibilities	
Increase your management responsibilities	
Reduce your teaching/training/research responsibilities	
Increase your teaching/training/research responsibilities	
Retire	
Leave general practice for an alternative career	
No plans to change	
Don't know	

Please comment on factors which are contributing to this decision

22. If you are intending to retire from family medicine or general practice field in the Ministry of Health within the next 5 years, would you consider continuing to work after retirement? *Please select*

Yes	No

23. For each of the following factors please indicate how they are contributing to your decision about if or when to leave or retire from family medicine or general practice.

	Not at all important				Very important
	1	2	3	4	5
Volume of workload					
Intensity of workload					
Lack of time for patient contact					
Too much time spent on unimportant tasks					
Poor flexibility of hours					
Potential introduction of 7 days a week working					
Reduced job satisfaction					
Age					
Family commitments					
Ill health					
Starting a career outside family medicine or general practice					
Planned career break					
Increased risk of legal actions					
low payment compared to other medical specialities					

Other (please specify):

24. Please indicate the extent to which each of the following factors might encourage you to remain in family medicine or general practice?

	Not at all important				Very important
	1	2	3	4	5
Reduced volume of workload					
Reduced intensity of workload					
More flexible working conditions					
More time to spend with patients					
Improve skill-mix in the clinic					
Shorter clinic opening times					
Less administration					
No on-call duties					
Greater clinical autonomy					
Additional annual leave					
Opportunity for a sabbatical					
Protected time for education and training					
Extended interests, e.g. emergency care role, specialist interest, teaching?					
Increased pay					
Incentive payment to encourage continuing to practice					

Other (please specify)

25. What is the greatest problem within family medicine or general practice at the current time?

26.What intervention would help family medicine or general practice the most?

27. Your primary care centre is located in which health district? *Please select*

A	B	C	D	E

28. Approximately, what is the **total population covered by your centre**?

29. What is your centre's **working hours**?

30. Gender

Male	Female

31.Your age

32. What is your nationality?

Kuwaiti	Non-Kuwaiti

If your nationality is Non-Kuwaiti, please specify:

33. What is your current rank in the Ministry of Health?

Assistant Registrar	Registrar	Senior Registrar	Specialist	Consultant

34. What is your highest medical qualification? And obtained from which country?

35. Country/continent where you studied for medical degree

- Thank you for completing the survey. We will communicate the results to all participants. **The next steps of this project will be qualitative interviews, if you wish to participate, please provide us with the details of your preferred mode of contact:**
    - Phone/Mobile:
    - Email:

Appendix 14 Association of Leaving Primary Care for An Alternative Career in the Next Five years with Work-Related and Demographic Factors

	Leaving for Alternative career				**Pearson Chi-Square & P Value**
	Yes		**No**		
	N	**%**	**N**	**%**	
Involvement in other roles					Chi-Square= 0.778, P= 0.378
Yes	23	25.8	66	74.2	
No	20	20.4	78	76.9	
Duration of working in FM/PC					Chi-Square= 5.558, **P= 0.018**
10 years or less	30	30.6	68	69.4	
More than 10 years	15	16.1	78	83.9	
Total working hours					Chi-Square= 3.789, P= 0.285
Less than 20 hours	0	0	2	100	
21 - 30 hours	2	9.5	19	90.5	
31 - 40 hours	10	30.3	23	69.7	
More than 40 hours	29	22.5	100	77.5	
Working hours in direct patient contact					Chi-Square= 4.053, P= 0.256
Less than 20 hours	0	0	10	100	
21 - 30 hours	9	24.3	28	75.7	
31 - 40 hours	18	28.6	45	71.4	
More than 40 hours	18	22.2	63	77.8	
Night duties per week					Chi-Square= 0.161, P= 0.923
Less than 2	26	23.6	84	76.4	
2 or more	6	25	18	75	
None	12	26.7	33	73.3	
Working hours in the last 2 years					Chi-Square= 0.119, P= 0.942
Increased	17	22.7	58	77.3	
Remained the same	26	24.8	79	75.2	
Decreased	2	22.2	7	77.8	
Patients seen in the last 2 years					Chi-Square= 4.452, P= 0.217
Increased	31	26.5	86	73.5	
Remained the same	6	14.6	35	85.4	
Decreased	5	31.3	11	68.8	
Do not know	0	0	5	100	
Current level of morale					Chi-Square= 19.478, **P= 0.000058**
Low	10	66.7	5	33.3	
Neutral	18	26.9	49	73.1	
High	17	8.9	91	84.3	

Level of morale in last 2 years					Chi-Square= 14.129, **P= 0.001**
Increased	18	22.8	61	77.2	
Remained the same	15	16.7	75	83.3	
Decreased	12	54.5	10	45.5	
Current level of satisfaction					Chi-Square= 19.325, **P= 0.00006**
Dissatisfied	11	47.8	12	52.2	
Neutral	25	31.6	54	68.4	
Satisfied	9	10.1	80	89.9	
Level of satisfaction in last 2 years					Chi-Square= 26.331, **P= 0.0000**
Increased	8	16.7	40	83.3	
Remained the same	15	14.7	87	85.3	
Decreased	22	53.7	19	46.3	
Volume of workload as factor to leave FM/PC					Chi-Square= 6.501, **P= 0.039**
Not important	3	8.3	33	91.7	
Neutral	11	32.4	23	67.6	
Important	29	26.4	81	73.6	
Intensity of workload as factor to leave FM/PC					Chi-Square= 7.499, **P= 0.024**
Not important	2	6.3	30	93.8	
Neutral	12	33.3	24	66.7	
Important	27	26	77	74	
Lack of time with patients as factor to leave FM/PC					Chi-Square= 3.265, P= 0.195
Not important	5	16.7	25	83.3	
Neutral	8	17.4	38	82.6	
Important	28	28.9	69	71.1	
Too much time spent on unimportant tasks as factor to leave FM/PC					Chi-Square= 10.565, **P= 0.005**
Not important	4	11.4	31	88.6	
Neutral	5	15.2	28	84.8	
Important	36	35.6	65	64.4	
Poor flexibility of hours as factor to leave FM					Chi-Square= 7.952, **P= 0.019**
Not important	2	6.7	28	93.3	
Neutral	11	23.4	36	76.6	
Important	27	32.5	56	67.5	
Introducing 7 days a week working as factor to leave FM/PC					Chi-Square= 9.647, **P= 0.008**
Not important	0	0	20	100	
Neutral	6	17.1	29	82.9	
Important	35	30.2	81	69.8	
Reduced job satisfaction as factor to leave FM/PC					Chi-Square= 4.867, P= 0.088
Not important	3	11.1	24	88.9	
Neutral	8	21.1	30	78.9	
Important	34	30.6	77	69.4	

Family commitments as factor to leave FM/PC					Chi-Square= 1.717, P= 0.424
Not important	5	15.6	27	84.4	
Neutral	9	25.7	26	74.3	
Important	28	26.9	76	73.1	
Ill health as factor to leave FM/PC					Chi-Square= 1.518, P= 0.468
Not important	16	30.8	36	69.2	
Neutral	6	20.7	23	79.3	
Important	20	22.5	69	77.5	
Age as factor to leave FM/PC					Chi-Square= 1.831, P= 0.4
Not important	15	29.4	36	70.6	
Neutral	9	25.7	26	74.3	
Important	17	19.5	70	80.5	
Starting a career outside FM/PC as factor to leave FM/PC					Chi-Square= 14.340, **P= 0.001**
Not important	10	12.8	68	87.2	
Neutral	9	26.5	25	73.5	
Important	25	41	36	59	
Planned career break as factor to leave FM/PC					Chi-Square= 1.600, P= 0.449
Not important	16	20.5	62	79.5	
Neutral	8	25	24	75	
Important	16	30.2	37	69.8	
Risk of legal actions as factor to leave FM/PC					Chi-Square= 3.100, P= 0.212
Not important	14	20.3	55	70.7	
Neutral	13	35.1	24	64.9	
Important	15	22.4	52	77.6	
Low payment compared to other specialities as factor to leave FM/PC					Chi-Square= 2.915, P= 0.233
Not important	10	21.3	37	78.7	
Neutral	5	15.6	27	84.4	
Important	30	29.4	72	70.6	
Reduced workload volume as factor to stay in FM/PC					Chi-Square= 6.764, **P= 0.034**
Not important	1	4.8	20	95.2	
Neutral	5	16.1	26	83.9	
Important	38	28.4	96	71.6	
Reduced workload intensity as factor to stay in FM/PC					Chi-Square= 7.855, **P= 0.02**
Not important	1	4.3	22	95.7	
Neutral	4	14.3	24	85.7	
Important	37	28.5	93	71.5	
More flexible working conditions as factor to stay in FM/PC					Chi-Square= 3.834, P= 0.147
Not important	1	9.1	10	90.9	
Neutral	2	10.5	17	89.5	
Important	39	26.7	107	73.3	

More time spent with patients as factor to stay in FM/PC					Chi-Square= 2.837, P= 0.242
Not important	2	10	18	90	
Neutral	4	18.2	18	81.8	
Important	37	25.9	106	74.1	
Improving skill-mix in the clinic as factor to stay in FM/PC					Chi-Square= 4.429, P= 0.109
Not important	0	0	14	100	
Neutral	6	21.4	22	78.6	
Important	34	24.5	105	75.5	
Shorter clinic opening times as factor to stay in FM/PC					Chi-Square= 8.033, P= **0.018**
Not important	2	7.4	25	92.6	
Neutral	6	16.7	30	83.3	
Important	35	31	78	69	
Less administration as factor to stay in FM/PC					Chi-Square= 12.135, P= **0.002**
Not important	9	17.6	42	82.4	
Neutral	4	10	36	90	
Important	29	36.7	50	63.3	
No on call duties as factor to stay in FM/PC					Chi-Square= 1.206, P= 0.547
Not important	8	19	34	81	
Neutral	7	21.2	26	78.8	
Important	26	27.1	70	72.9	
Greater clinical autonomy as factor to stay in FM/PC					Chi-Square= 2.127, P= 0.345
Not important	3	16.7	15	83.3	
Neutral	9	18.8	39	81.3	
Important	28	28	72	72	
Additional annual leave as factor to stay in FM/PC					Chi-Square= 0.066, P= 0.967
Not important	7	24.1	22	75.9	
Neutral	7	21.9	25	78.1	
Important	29	24	92	76	
Opportunity for sabbatical as factor to stay in FM/PC					Chi-Square= 2.623, P= 0.269
Not important	2	9.5	19	90.5	
Neutral	14	26.9	38	73.1	
Important	19	22.9	64	77.1	
Protected time for education and training as factor to stay in FM/PC					Chi-Square= 2.101, P= 0.350
Not important	4	23.5	13	76.5	
Neutral	4	13.3	26	86.7	
Important	34	25.8	98	74.2	
Extended interests as factor to stay in FM/PC					Chi-Square= 1.304, P= 0.521
Not important	5	21.7	18	78.3	
Neutral	6	17.1	29	82.9	
Important	31	26.3	87	73.7	

Increased pay as factor to stay in FM/PC					Chi-Square= 1.348, P= 0.510
Not important	4	15.4	22	84.6	
Neutral	5	29.4	12	70.6	
Important	34	24.5	105	75.5	
Incentive payment as factor to stay in FM/PC					Chi-Square= 1.090, P= 0.580
Not important	4	16.7	20	83.3	
Neutral	5	18.5	22	81.5	
Important	32	24.8	97	75.2	
Health district					Chi-Square= 9.449, **P= 0.051**
A	8	20.5	31	79.5	
B	16	41	23	59	
C	7	21.9	25	78.1	
D	7	17.9	32	82.1	
E	6	14.6	35	85.4	
Centre working hours					Chi-Square= 2.021, P= 0.732
7 hours	7	21.3	10	76.9	
14 hours	1	20	4	80	
17 hours	17	19.5	70	80.5	
24 hours	15	26.3	42	73.7	
other	6	33.3	12	66.7	
Gender					Chi-Square= 3.252, P= 0.071
Male	14	17.1	68	82.9	
Female	30	28.3	76	71.7	
Nationality					Chi-Square= 2.59, P= 0.458
Kuwaiti	18	30	42	70	
Non-Kuwaiti	27	21.1	101	78.9	
Rank					Chi-Square= 4.170, P= 0.383
Assistant registrar	10	27.8	26	72.2	
Registrar	15	31.3	33	68.8	
Senior registrar	9	17	44	83	
Specialist	6	21.4	22	78.6	
Consultant	2	13.3	13	86.7	
Country of highest medical qualification					Chi-Square= 2.585, P= 0.859
Kuwait	8	28.6	20	71.4	
Egypt	13	27.7	34	72.3	
Syria	3	20	12	80	
Other Arab countries	1	14.3	6	85.7	
Asia	1	16.7	5	83.3	
Europe	4	23.5	13	76.5	
Other	0	0	4	100	

Country of medical degree					Chi-Square= 1.908, P= 0.928
Kuwait	11	30.6	25	69.4	
Egypt	22	27.2	59	72.8	
Syria	5	25	15	75	
Other Arab countries	3	20	12	80	
Asia	1	12.5	7	87.5	
Europe	3	23.1	10	76.9	
Other	0	0	1	100	
Population covered by the centre					Chi-Square= 2.482, P= 0.478
Up to 25000	9	17.6	42	82.4	
25001-50000	9	32.1	19	67.9	
50001 and above	7	29.3	17	70.8	
Don not know	7	25.9	20	74.1	
Age					Chi-Square= 13.452, **P= 0.009**
25 - 34	12	33.3	24	66.7	
35 - 44	23	32.9	47	67.1	
45 - 54	6	16.2	31	83.8	
55 - 64	3	8.1	34	91.9	
65 and above	0	0	7	100	
Qualification					Chi-Square= 1.799, P= 0.876
Kuwaiti board of FM	6	28.6	15	71.4	
First part of FM board, MSc FM, or other FM qualification	5	20.8	19	79.2	
Other MSc qualification	6	20	24	80	
Diploma	9	26.5	25	73.5	
Medical degree	14	31.8	30	68.2	
Other	3	30	7	70	

Note: N = Number, % = Percentage, Significant results in bold, FM= Family medicine, PC = Primary Care

Appendix 15 Association of Number of Planned Working Years as Primary Care Doctor with Work-Related and Demographic Factors

	Number of planned working years as FM				Pearson Chi-Square & P Value
	Less than 5 years		More than 5 years		
	N	%	N	%	
Involvement in other roles					Chi-Square=1.716, P=0.19
Yes	23	26.4	64	73.6	
No	34	35.4	62	64.6	
Duration of working in FM/PC					Chi-Square= 1.426, P= 0.232
10 years or less	26	27.1	70	72.9	
More than 10 years	32	35.2	59	64.8	
Total working hours					Chi-Square= 6.697, P= 0.082
Less than 20 hours	0	0	2	100	
21 - 30 hours	2	9.5	19	90.5	
31 - 40 hours	10	30.3	23	69.7	
More than 40 hours	45	35.7	81	64.3	
Working hours in direct patient contact					Chi-Square= 3.56, P= 0.313
Less than 20 hours	1	10	9	90	
21 - 30 hours	9	24.3	28	75.7	
31 - 40 hours	22	34.9	41	65.1	
More than 40 hours	26	33.8	51	66.2	
Night duties per week					Chi-Square= 5.262, P= 0.072
Less than 2	35	32.7	72	67.3	
2 or more	12	50	12	50	
None	10	22.7	34	77.3	
Working hours in the last 2 years					Chi-Square= 0.372, P= 0.830
Increased	23	31.5	50	68.5	
Remained the same	33	32	70	68	
Decreased	2	22.2	7	77.8	
Patients seen in the last 2 years					Chi-Square= 5.714, P= 0.126
Increased	34	29.6	81	70.4	
Remained the same	16	39	25	61	
Decreased	1	6.7	14	93.3	
Do not know	2	40	3	60	
Current level of morale					Chi-Square= 4.308, P= 0.116
Low	8	53.3	7	46.7	
Neutral	21	32.3	44	67.7	
High	29	27.1	78	72.9	
Level of morale in last 2 years					Chi-Square= 3.124, P= 0.210
Increased	19	24.7	58	75.3	
Remained the same	30	33.7	59	66.3	
Decreased	9	42.9	12	57.1	

Current level of satisfaction					Chi-Square= 10.209, **P= 0.006**
Dissatisfied	13	59.1	9	40.9	
Neutral	24	31.2	53	68.8	
Satisfied	21	23.9	67	76.1	
Level of satisfaction in last 2 years					Chi-Square= 15.778, **P= 0.0000**
Increased	5	10.6	42	89.4	
Remained the same	34	33.3	68	66.7	
Decreased	19	50	19	50	
Volume of workload as factor to leave FM/PC					Chi-Square= 0.475, P= 0.789
Not important	11	30.6	25	69.4	
Neutral	9	26.5	25	73.5	
Important	35	32.7	72	67.3	
Intensity of workload as factor to leave FM/PC					Chi-Square= 2.208, P= 0.332
Not important	10	31.2	22	68.8	
Neutral	8	22.2	28	77.8	
Important	36	35.6	65	64.4	
Lack of time with patients as factor to leave FM/PC					Chi-Square= 2.866, P= 0.239
Not important	13	44.8	16	55.2	
Neutral	15	33.3	30	66.7	
Important	27	28.1	69	71.9	
Too much time spent on unimportant tasks as factor to leave FM/PC	14	41.2	20	58.2	Chi-Square= 1.949, P= 0.377
Not important	8	25	24	75	
Neutral	33	33	67	67	
Important					
Poor flexibility of hours as factor to leave FM/PC					Chi-Square= 0.022, P= 0.989
Not important	9	31	20	69	
Neutral	15	32.6	31	67.4	
Important	26	31.7	56	68.3	
Introducing 7 days a week working as factor to leave FM/PC					Chi-Square= 0.966, P= 0.608
Not important	4	21.1	15	78.9	
Neutral	11	31.4	24	68.6	
Important	37	32.5	77	67.5	
Reduced job satisfaction as factor to leave FM/PC					Chi-Square= 0.647, P= 0.723
Not important	10	38.5	16	61.5	
Neutral	11	28.9	27	71.1	
Important	35	32.1	74	67.9	
Family commitments as factor to leave FM/PC					Chi-Square= 1.666, P= 0.435
Not important	9	29	22	71	
Neutral	8	22.9	27	77.1	
Important	35	34.3	67	65.7	

Ill health as factor to leave FM/PC					Chi-Square= 5.053, P= 0.08
Not important	22	44	28	56	
Neutral	7	24.1	22	75.9	
Important	24	27.3	64	72.7	
Age as factor to leave FM/PC					Chi-Square= 5.376, P= 0.068
Not important	13	26.5	36	73.5	
Neutral	7	20.6	27	79.4	
Important	35	40.2	52	59.8	
Starting a career outside FM as factor to leave FM/PC					Chi-Square= 3.701, P= 0.157
Not important	27	35.5	49	64.5	
Neutral	26	17.6	28	82.4	
Important	20	33.3	40	66.7	
Planned career break as factor to leave FM/PC					Chi-Square= 1.941, P= 0.379
Not important	21	28	54	72	
Neutral	10	31.3	22	68.8	
Important	21	39.6	32	60.4	
Risk of legal actions as factor to leave FM/PC					Chi-Square= 0.327, P= 0.849
Not important	24	34.8	45	65.2	
Neutral	11	31.4	24	68.6	
Important	20	30.3	46	69.7	
Low payment compared to other specialities as factor to leave FM/PC					Chi-Square= 0.387, P= 0.824
	14	29.8	33	70.2	
Not important	9	28.1	23	71.9	
Neutral	33	33.3	66	66.7	
Important					
Reduced workload volume as factor to stay in FM/PC					Chi-Square= 0.751, P= 0.687
Not important	8	38.1	13	61.9	
Neutral	8	26.7	22	73.3	
Important	42	32.1	89	67.9	
Reduced workload intensity as factor to stay in FM/PC					Chi-Square= 3.699, P= 0.157
Not important	10	43.5	13	56.5	
Neutral	5	18.5	22	81.5	
Important	42	33.1	85	66.9	
More flexible working conditions as factor to stay in FM/PC					Chi-Square= 1.110, P= 0.574
Not important	4	36.4	7	63.6	
Neutral	4	21.1	15	78.9	
Important	46	32.2	97	67.8	
More time spent with patients as factor to stay in FM/PC					Chi-Square= 2.166, P= 0.399
Not important	8	42.1	11	57.9	
Neutral	9	40.9	13	59.1	
Important	41	29.3	99	70.7	

Improving skill-mix in the clinic as factor to stay in FM/PC					Chi-Square= 5.381, P= 0.068
Not important	7	50	7	50	
Neutral	12	42.9	16	57.1	
Important	36	26.7	99	73.3	
Shorter clinic opening times as factor to stay in FM/PC					Chi-Square= 2.847, P= 0.241
Not important	5	19.2	21	80.8	
Neutral	10	27.8	26	72.2	
Important	39	35.5	71	64.5	
Less administration as factor to stay in FM/PC					Chi-Square= 0.346, P= 0.841
Not important	17	34	33	66	
Neutral	11	28.2	28	71.8	
Important	25	32.1	53	67.9	
No on call duties as factor to stay in FM/PC					Chi-Square= 3.104, P= 0.208
Not important	18	43.9	23	56.1	
Neutral	9	27.3	24	72.7	
Important	28	29.8	66	70.2	
Greater clinical autonomy as factor to stay in FM/PC					Chi-Square= 1.794, P= 0.408
Not important	8	44.4	10	55.6	
Neutral	15	31.9	32	68.1	
Important	28	28.6	70	71.4	
Additional annual leave as factor to stay in FM/PC					Chi-Square= 0.613, P= 0.736
Not important	10	34.5	19	65.5	
Neutral	8	25.8	23	74.2	
Important	38	32.2	80	67.8	
Opportunity for sabbatical as factor to stay in FM/PC					Chi-Square= 1.449, P= 0.485
Not important	8	38.1	13	61.9	
Neutral	17	33.3	34	66.7	
Important	21	26.3	59	73.7	
Protected time for education and training as factor to stay in FM/PC					Chi-Square= 2.211, P= 0.331
	8	47.1	9	52.9	
Not important	8	27.6	21	72.4	
Neutral	39	30.2	90	69.8	
Important					
Extended interests as factor to stay in FM/PC					Chi-Square= 2.81, P= 0.245
Not important	9	39.1	14	60.9	
Neutral	7	20	28	80	
Important	37	32.5	77	67.5	
Increased pay as factor to stay in FM/PC					Chi-Square= 0.310, P= 0.856
Not important	9	34.6	17	65.4	
Neutral	6	35.3	11	64.7	
Important	41	30.4	94	69.6	

Incentive payment as factor to stay in FM/PC					Chi-Square= 0.627, P= 0.731
Not important	9	37.5	15	62.5	
Neutral	8	30.8	18	69.2	
Important	37	29.4	89	70.6	
Health district					Chi-Square=14.771, **P= 0.005**
A	9	23.1	30	76.9	
B	15	38.5	24	61.5	
C	5	16.1	26	83.9	
D	20	52.6	18	47.4	
E	9	23.1	30	76.9	
Centre working hours					Chi-Square= 2.204, P= 0.698
7 hours	3	23.1	10	76.9	
14 hours	1	20	4	80	
17 hours	24	27.9	62	72.1	
24 hours	21	37.5	35	62.5	
other	6	33.3	12	66.7	
Gender					Chi-Square= 2.039, P= 0.153
Male	30	37	51	63	
Female	28	27.2	75	72.8	
Nationality					Chi-Square= 2.434, P= 0.119
Kuwaiti	14	23.3	46	76.7	
Non-Kuwaiti	43	34.7	81	65.3	
Rank					Chi-Square= 1.568, P= 0.815
Assistant registrar	9	25.7	26	74.3	
Registrar	13	27.1	35	72.9	
Senior registrar	18	35.5	33	64.7	
Specialist	10	35.7	18	64.3	
Consultant	5	33.3	10	66.7	
Country of highest medical qualification					Chi-Square= 8.191, P= 0.224
Kuwait	7	25	21	75	
Egypt	16	34.8	30	65.2	
Syria	8	53.3	7	46.7	
Other Arab countries	0	0	7	100	
Asia	1	16.7	5	83.3	
Europe	6	37.5	10	62.5	
Other	1	25	3	75	
Country of medical degree					Chi-Square= 8.021, P= 0.237
Kuwait	8	22.2	28	77.8	
Egypt	32	40.5	47	59.5	
Syria	8	42.1	11	57.8	
Other Arab countries	2	13.3	13	86.7	

Asia	2	25	6	75	
Europe	4	30.8	9	69.2	
Other	0	0	1	100	
Population covered by the centre					Chi-Square=20.959, **P= 0.000**
Don not know	15	55.6	12	44.4	
Up to 25000	4	8.2	45	91.8	
25001-50000	9	32.1	19	67.9	
50001 and above	9	37.5	15	62.5	
Age					Chi-Square=14.392, **P= 0.006**
25 - 34	10	27.8	26	72.2	
35 - 44	15	22.1	53	77.9	
45 - 54	11	30.6	25	69.4	
55 - 64	15	41.7	21	58.3	
65 and above	6	85.7	1	14.3	
Qualification					Chi-Square= 18.714, **P= 0.002**
Kuwaiti board of FM	3	14.3	18	85.7	
First part of FM board, MSc FM, or other FM qualification	2	8.3	15	91.7	
Other MSc qualification	15	50	22	50	
Diploma	11	33.3	15	66.7	
Medical degree	14	32.6	29	67.4	
Other	6	66.7	3	33.3	

Note: N = Number, % = Percentage, FM = Family medicine, PC = Primary care, Significant results in Bold

Appendix 16 Associations of Retirement Intention in the Next Five years with Work-Related and Demographic Factors

	Retirement				Pearson Chi-Square & P Value
	Yes		No		
	N	%	N	%	
Involvement in other roles					Chi-Square= 2.271, P= 0.132
Yes	11	12.5	77	87.5	
No	6	6.1	92	93.3	
Duration of working in FM/PC					Chi-Square= 6.125, **P= 0.013**
10 years or less	4	4.1	94	95.9	
More than 10 years	13	14.4	77	85.6	
Total working hours					Chi-Square= 1.032, P= 0.793
Less than 20 hours	0	0	2	100	
21 - 30 hours	1	4.8	20	95.2	
31 - 40 hours	4	12.1	29	87.9	
More than 4o hours	12	9.5	114	90.5	
Working hours in direct patient contact					Chi-Square= 2.088, P= 0.554
Less than 20 hours	2	20	8	80	
21 - 30 hours	2	5.4	35	94.6	
31 - 40 hours	6	9.7	56	90.3	
More than 40 hours	7	8.9	72	90.1	
Night duties per week					Chi-Square= 5.969, P= 0.51
Less than 2	6	5.6	102	94.4	
2 or more	3	12.5	21	87.5	
None	8	18.2	36	81.8	
Working hours in the last 2 years					Chi-Square= 0.145, P= 0.930
Increased	6	8.2	67	91.8	
Remained the same	10	9.6	94	90.4	
Decreased	1	11.1	8	88.9	
Patients seen in the last 2 years					Chi-Square= 2.273, P= 0.518
Increased	11	9.6	104	90.4	
Remained the same	4	9.8	37	90.2	
Decreased	0	0	15	100	
Do not know	1	20	4	80	
Current level of morale					Chi-Square= 1.369, P= 0.504
Low	1	6.7	41	93.3	
Neutral	4	6.2	61	93.8	
High	12	11.2	95	88.8	
Level of morale in last 2 years					Chi-Square= 2.481, P= 0.289
Increased	8	10.1	69	89.6	
Remained the same	9	10.4	80	89.9	
Decreased	0	0	22	100	

Current level of satisfaction					Chi-Square= 5.155, P= 0.076
Dissatisfied	5	21.7	18	78.3	
Neutral	6	7.1	73	92.4	
Satisfied	6	7	80	93	
Level of satisfaction in last 2 years					Chi-Square= 4.356, P= 0.113
Increased	4	8.5	43	91.5	
Remained the same	6	6	94	94	
Decreased	7	17.1	34	82.9	
Volume of workload as factor to leave FM/PC					Chi-Square= 0.491, P= 0.782
Not important	3	8.6	32	91.4	
Neutral	4	12.1	29	87.9	
Important	9	8.2	101	91.8	
Intensity of workload as factor to leave FM/PC					Chi-Square= 1.974, P= 0.373
Not important	3	9.7	28	90.3	
Neutral	1	2.9	34	97.1	
Important	11	10.6	93	89.4	
Lack of time with patients as factor to leave FM/PC					Chi-Square= 3.741, P= 0.154
Not important	4	13.8	25	86.2	
Neutral	1	2.2	45	97.8	
Important	10	10.4	86	89.6	
Too much time spent on unimportant tasks as factor to leave FM/PC	3	8.8	31	91.2	Chi-Square= 0.929, P= 0.629
Not important	2	6.3	30	93.8	
Neutral	12	11.9	89	88.1	
Important					
Poor flexibility of hours as factor to leave FM/PC					Chi-Square= 2.948, P= 0.229
Not important	1	3.4	28	96.6	
Neutral	6	13	40	87	
Important	5	6	78	94	
Introducing 7 days a week working as factor to leave FM/PC					Chi-Square= 2.723, P= 0.256
Not important	3	15.8	16	84.2	
Neutral	4	11.8	30	88.2	
Important	7	6	109	94	
Reduced job satisfaction as factor to leave FM/PC					Chi-Square= 1.054, P= 0.590
Not important	2	7.7	24	92.3	
Neutral	2	5.4	35	94.6	
Important	12	10.8	99	89.2	
Family commitments as factor to leave FM/PC					Chi-Square= 1.645, P= 0.439
Not important	1	3.2	30	96.8	
Neutral	4	11.8	30	88.2	
Important	10	9.6	94	90.4	

Ill health as factor to leave FM/PC					Chi-Square= 7.485, **P= 0.024**
Not important	10	19.6	41	80.4	
Neutral	1	3.6	27	96.4	
Important	6	6.7	83	93.3	
Age as factor to leave FM/PC					Chi-Square= 3.048, P= 0.218
Not important	4	8	46	92	
Neutral	1	2.9	34	97.1	
Important	11	12.8	75	87.2	
Starting a career outside FM/PC as factor to leave FM/PC					Chi-Square= 2.131, P= 0.345
Not important	6	7.9	70	92.1	
Neutral	1	2.9	33	97.1	
Important	7	11.5	54	88.5	
Planned career break as factor to leave FM/PC					Chi-Square= 0.303 , P= 0.859
Not important	7	9.2	69	90.8	
Neutral	2	6.3	30	93.8	
Important	5	9.4	48	90.6	
Risk of legal actions as factor to leave FM/PC					Chi-Square= 3.257, P= 0.196
Not important	9	13.4	58	86.6	
Neutral	1	2.7	36	97.3	
Important	6	9	61	91	
Low payment compared to other specialities as factor to leave FM/PC	5	11.1	40	88.9	Chi-Square= 1.845, P= 0.398
Not important	1	3.1	31	96.9	
Neutral	11	10.8	91	89.2	
Important					
Reduced workload volume as factor to stay in FM/PC					Chi-Square= 3.131, P= 0.209
Not important	4	20	16	80	
Neutral	2	6.7	28	93.3	
Important	11	8.3	122	91.7	
Reduced workload intensity as factor to stay in FM/PC					Chi-Square= 2.596, P= 0.273
Not important	4	18.2	18	81.8	
Neutral	2	7.4	25	92.6	
Important	10	7.8	119	92.2	
More flexible working conditions as factor to stay in FM/PC					Chi-Square= 1.563, P= 0.458
Not important	2	18.2	9	81.8	
Neutral	1	5.3	19	94.7	
Important	12	8.3	132	91.7	
More time spent with patients as factor to stay in FM/PC					Chi-Square= 1.699, P= 0.824
Not important	3	15.8	16	84.2	
Neutral	2	9,1	20	90.9	
Important	10	7.1	131	92.9	

Improving skill-mix in the clinic as factor to stay in FM/PC					Chi-Square= 4.477, P= 0.107
Not important	3	23.1	10	76.9	
Neutral	3	10.7	25	89.3	
Important	9	6.5	129	93.5	
Shorter clinic opening times as factor to stay in FM/PC					Chi-Square= 0.161, P= 0.923
Not important	3	11.1	24	88.9	
Neutral	3	8.3	33	91.7	
Important	10	8.9	102	91.1	
Less administration as factor to stay in FM/PC					Chi-Square= 4.094, P= 0.129
Not important	3	6	47	94	
Neutral	1	2.5	39	97.5	
Important	10	12.7	69	87.3	
No on call duties as factor to stay in FM/PC					Chi-Square= 0.495, P= 0.781
Not important	3	7.3	38	92.7	
Neutral	4	12.1	29	87.9	
Important	9	9.4	87	90.6	
Greater clinical autonomy as factor to stay in FM/PC					Chi-Square= 2.517, P= 0.284
Not important	3	17.6	14	82.4	
Neutral	3	6.3	45	93.8	
Important	7	7	93	93	
Additional annual leave as factor to stay in FM/PC					Chi-Square= 0.064, P= 0.969
Not important	3	10.7	25	89.3	
Neutral	3	9.4	29	90.6	
Important	11	9.2	109	90.8	
Opportunity for sabbatical as factor to stay in FM/PC					Chi-Square= 1.594, P= 0.451
Not important	3	15	17	85	
Neutral	3	5.8	49	94.2	
Important	7	8.5	75	91.5	
Protected time for education and training as factor to stay in FM/PC	3	18.8	13	81.3	Chi-Square= 2.424, P= 0.298
Not important	2	6.7	28	93.3	
Neutral	10	7.6	121	92.4	
Important					
Extended interests as factor to stay in FM/PC					Chi-Square= 2.448, P= 0.294
Not important	4	18.2	18	81.8	
Neutral	4	11.4	31	88.6	
Important	9	7.7	108	92.3	
Increased pay as factor to stay in FM/PC					Chi-Square= 3.859, P= 0.145
Not important	5	20	20	80	
Neutral	1	5.9	16	94.1	
Important	11	8	127	92	

Incentive payment as factor to stay in FM/PC					Chi-Square= 2.755, P= 0.252
Not important	4	17.4	19	82.6	
Neutral	2	7.4	25	92.6	
Important	9	7	119	93	
Health district					Chi-Square= 1.857, P= 0.762
A	4	10.3	35	89.7	
B	5	13.2	33	86.8	
C	2	6.5	29	93.5	
D	2	5.1	37	94.9	
E	4	9.8	37	90.2	
Centre working hours					Chi-Square= 3.600, P= 0.463
7 hours	1	7	12	92.3	
14 hours	0	0	5	100	
17 hours	5	5.8	81	94.2	
24 hours	8	14.3	48	85.7	
other	2	11.1	16	88.9	
Gender					Chi-Square= 0.043, P= 0.836
Male	7	8.6	74	91.4	
Female	10	9.5	95	90.5	
Nationality					Chi-Square= 0.427, P= 0.514
Kuwaiti	6	10	54	90	
Non-Kuwaiti	9	7.2	116	92.8	
Rank					Chi-Square= 16.560, P= 0.002
Assistant registrar	0	0	36	100	
Registrar	5	10.6	42	89.4	
Senior registrar	4	7.7	48	92.3	
Specialist	1	3.6	27	96.4	
Consultant	5	33.3	10	66.7	
Country of highest medical qualification					Chi-Square= 4.961, P= 0.549
Kuwait	4	14.3	24	85.7	
Egypt	2	4.3	44	95.7	
Syria	2	14.3	12	85.7	
Other Arab countries	0	0	7	100	
Asia	0	0	6	100	
Europe	1	5.9	16	94.1	
Other	0	0	4	100	
Country of medical degree					Chi-Square= 3.740, P= 0.712
Kuwait	5	13.9	31	86.1	
Egypt	6	7.6	73	92.2	
Syria	2	10.5	17	89.5	
Other Arab countries	1	6.7	14	93.3	

Asia	0	0	8	100	
Europe	0	0	13	100	
Other	0	0	1	100	
Population covered by the centre					Chi-Square= 0.510, P= 0.917
Don not know	3	11.5	23	88.5	
Up to 25000	4	7.8	47	92.2	
25001-50000	3	10.7	25	89.3	
50001 and above	3	12.5	21	87.5	
Age					Chi-Square= 7.545, P= 0.110
25 – 34	1	2.8	35	97.2	
35 - 44	4	5.7	66	94.3	
45 - 54	7	18.9	30	81.1	
55 - 64	4	11.1	22	88.9	
65 and above	1	16.7	5	83.3	
Qualification					Chi-Square= 7.246, P= 0.203
Kuwaiti board of FM	2	9.5	19	90.5	
First part of FM board, MSc FM, or other FM qualification	2	8.3	22	91.7	
Other MSc qualification	5	17.9	23	82.1	
Diploma	1	2.9	33	97.1	
Medical degree	1	2.3	42	97.7	
Other	1	10	9	90	

Note: N = Number, % R = Percentage in retirement, % Percentage, Significant results in Bold, FM= Family medicine, PC = Primary Care

Appendix 17 Summary of Binary Logistic Regression Models on Leaving Primary Care

	Variables Included	Variables Excluded	Significant Results & R square
M1	Age, health district, nationality, gender, duration of work in FM, too much time spent on unimportant tasks*, poor flexibility of hours*, introduction of seven working days*, shorter clinic opening hours**, less administration**, **current level of satisfaction, intensity of workload***	Current morale level, morale level in the last 2 years, satisfaction level in the last 2 years, volume of workload*, reducing volume of workload**, reducing intensity of workload**	• Rating too much time spent on unimportant tasks* as neutral (OR=0.021, P value=0.007, CI= 0.001 – 0.342) • Current dissatisfaction (OR= 28.260, P value=0.001, CI=3.268 – 220.11) • Rating intensity of workload* as a neutral (OR= 21.778, P value=0.006, CI= 2.389– 198.515) • Nagelkerke R square = 0.597
M2	Age, health district, nationality, gender, duration of work in FM, too much time spent on unimportant tasks*, poor flexibility of hours*, introduction of seven working days*, shorter clinic opening hours**, less administration**, **satisfaction level in the last 2 years, intensity of workload***	Current morale level, morale level in the last 2 years, Current satisfaction level, volume of workload *, reducing volume of workload**, reducing intensity of workload**	• Rating too much time spent on unimportant tasks* as neutral (OR=0.036, P value=0.02, CI= 0.002 – 0.597) • Rating less administration** factor as neutral (OR=0.021, P value=0.015, CI= 0.001 – 0.479) • Increased satisfaction in last 2 years (OR=0.096, P value=0.02, CI= 0.013 – 0.690) • Stable satisfaction in last 2 years (OR=0.013, P value=0.0000, CI= 0.001 – 0.129) • Rating the intensity of workload* as neutral (OR=31.763, P value=0.005, CI= 2.786 – 362.060) • Working in FM for less than 10 years (OR=17.963, P value=0.033, CI= 1.262 – 255.705) • Nagelkerke R square = 0.649
M3	Age, health district, nationality, gender, duration of work in FM, too much time spent on unimportant tasks*, poor flexibility of hours*, introduction of seven working days*, shorter clinic opening hours**, less administration**, **satisfaction level in the last 2 years, volume of workload***	Current morale level, morale level in the last 2 years, Current satisfaction level, intensity of workload *, reducing volume of workload**, reducing intensity of workload**	• Rating less administration** as neutral (OR=0.089, P value=0.045, CI= 0.008 – 0.951) • Increased satisfaction in last 2 years (OR=0.138, P value=0.029, CI= 0.023 – 0.819) • Stable satisfaction in last 2 years (OR=0.036, P value=0.0000, CI= 0.006 – 0.212) • Rating workload volume* as neutral (OR=7.737, P value=0.037, CI= 1.132 – 52.873) • Nagelkerke R square = 0.581
M4	Age, health district, nationality, gender, duration of work in FM, too much time spent on unimportant tasks*, poor flexibility of hours*, introduction of seven working days*, shorter clinic opening hours**, less administration**, **Morale level in the last 2 years, intensity of workload***	Current morale level, current satisfaction level, satisfaction level in the last 2 years, volume of workload*, reducing volume of workload**, reducing intensity of workload**	• Increased morale in last 2 years (OR=0.164, P value=0.044, Cl= 0.028 – 0.952) • Stable morale in last 2 years (OR=0.110, P value=0.013, CI= 0.019 – 0.633) • Rating too much time spent on unimportant tasks* as neutral (OR=0.077, P value=0.043, CI= 0.006 – 0.923),

			• Rating intensity of workload* as a neutral (OR=8.826, P value=0.028, CI= 1.269 – 61.406) • Nagelkerke R square = 0.532
M 5	Age, health district, nationality, gender, duration of work in FM, too much time spent on unimportant tasks*, poor flexibility of hours*, introduction of seven working days*, shorter clinic opening hours**, less administration**, **current level of morale, reducing volume of workload****	Morale level in the last 2 years, current satisfaction level, satisfaction level in the last 2 years, volume of workload*, intensity of workload*, reducing intensity of workload**	• Low morale (OR=50.627, P value= 0.0000, CI= 5.871 – 436.586) • Nagelkerke R square = 0.523
M 6	Age, health district, nationality, gender, duration of work in FM, too much time spent on unimportant tasks*, poor flexibility of hours*, introduction of seven working days*, shorter clinic opening hours**, less administration**, **current level of morale, reducing intensity of workload****	Morale level in the last 2 years, current satisfaction level, satisfaction level in the last 2 years, volume of workload*, intensity of workload*, reducing volume of workload**	• Low morale (OR=50.181, P value=0.0000, CI= 5.875 – 428.645) • Nagelkerke R square = 0.533

Note= OR= Odds ratio, CI= 95% confidence interval, M=model, * Factors related to leaving FM,** Factors related to staying in FM or primary ca

Appendix 18 Binary Logistic Regression Results - Leaving Primary Care Second Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	0.108	0.063	2.926	1	0.087	1.114	0.984	1.261
Health district			2.334	4	0.675			
Health district - A	-0.557	1.298	0.184	1	0.668	0.573	0.045	7.292
Health district - B	0.141	1.285	0.012	1	0.912	1.152	0.093	14.304
Health district - C	-0.151	1.374	0.012	1	0.912	0.860	0.058	12.695
Health district - D	-1.403	1.297	1.171	1	0.279	0.246	0.019	3.122
Kuwaiti Nationality	0.236	0.982	0.058	1	0.810	1.266	0.185	8.673
Male Gender	1.431	0.979	2.136	1	0.144	4.182	0.614	28.486
Too much time spent on unimportant tasks			5.468	2	0.065			
Too much time spent on unimportant tasks – not important	-1.283	1.238	1.074	1	0.300	0.277	0.025	3.137
Too much time spent on unimportant tasks – neutral	**-3.327**	**1.435**	**5.377**	**1**	**0.020**	**0.036**	**0.002**	**0.597**
Poor flexibility of hours			0.930	2	0.628			
Poor flexibility of hours – not important	-1.442	1.597	0.816	1	0.366	0.236	0.010	5.406
Poor flexibility of hours – neutral	-0.674	1.081	0.389	1	0.533	0.509	0.061	4.238
Potential introduction of 7 days a week working			0.100	2	0.951			
Potential introduction of 7 days a week working – not important	-21.029	7881.186	0.000	1	0.998	0.000	0.000	
Potential introduction of 7 days a week working – neutral	0.353	1.118	0.100	1	0.752	1.423	0.159	12.723
Shorter clinic opening times			0.107	2	0.948			
Shorter clinic opening times – not important	-0.543	1.834	0.088	1	0.767	0.581	0.016	21.160
Shorter clinic opening times – neutral	-0.240	1.167	0.042	1	0.837	0.786	0.080	7.751
Less administration			6.737	2	0.034			
Less administration – not important	1.058	1.123	0.887	1	0.346	2.879	0.319	26.005
Less administration – neutral	**-3.842**	**1.584**	**5.881**	**1**	**0.015**	**0.021**	**0.001**	**0.479**
Duration of working – 10 years or less	**2.888**	**1.355**	**4.544**	**1**	**0.033**	**17.963**	**1.262**	**255.705**
level of satisfaction in the last 2 years			13.821	2	0.001			
level of satisfaction in the last 2 years - Increased	**-2.348**	**1.009**	**5.419**	**1**	**0.020**	**0.096**	**0.013**	**0.690**
level of satisfaction in the last 2 years – Remained the same	**-4.350**	**1.174**	**13.735**	**1**	**0.000**	**0.013**	**0.001**	**0.129**
Intensity of workload			7.902	2	0.019			
Intensity of workload - not important	0.440	1.130	0.152	1	0.697	1.553	0.169	14.232
Intensity of workload – neutral	**3.458**	**1.242**	**7.758**	**1**	**0.005**	**31.763**	**2.786**	**362.060**
Constant	-4.624	3.332	1.926	1	0.165	0.010		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, satisfaction levels are compared to satisfied, duration of working are compared to more than 10 years, other factors are compared to important rating, Significant results in Bold

Appendix 19 Binary Logistic Regression Results - Leaving Primary Care Third Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	0.057	0.055	1.058	1	0.304	1.059	0.950	1.180
Health district			3.263	4	0.515			
Health district - A	-0.381	1.129	0.114	1	0.736	0.683	0.075	6.247
Health district - B	0.375	1.111	0.114	1	0.736	1.455	0.165	12.844
Health district - C	0.181	1.218	0.022	1	0.882	1.198	0.110	13.038
Health district - D	-1.570	1.190	1.741	1	0.187	0.208	0.020	2.142
Kuwaiti Nationality	-0.072	0.821	0.008	1	0.930	0.931	0.186	4.654
Male Gender	1.259	0.813	2.399	1	0.121	3.521	0.716	17.312
Too much time spent on unimportant tasks			3.760	2	0.153			
Too much time spent on unimportant tasks – not important	-1.262	1.241	1.034	1	0.309	0.283	0.025	3.225
Too much time spent on unimportant tasks – neutral	-2.615	1.392	3.531	1	0.060	0.073	0.005	1.119
Poor flexibility of hours			0.214	2	0.899			
Poor flexibility of hours – not important	-0.340	1.455	0.055	1	0.815	0.711	0.041	12.330
Poor flexibility of hours – neutral	0.251	0.885	0.080	1	0.777	1.285	0.227	7.279
Potential introduction of 7 days a week working			0.534	2	0.766			
Potential introduction of 7 days a week working – not important	-21.199	8403.591	0.000	1	0.998	0.000	0.000	
Potential introduction of 7 days a week working – neutral	-0.753	1.031	0.534	1	0.465	0.471	0.062	3.554
Shorter clinic opening times			0.438	2	0.803			
Shorter clinic opening times – not important	0.593	1.408	0.178	1	0.674	1.810	0.115	28.608
Shorter clinic opening times – neutral	-0.360	1.019	0.125	1	0.724	0.698	0.095	5.145
Less administration			4.525	2	0.104			
Less administration – not important	0.277	0.990	0.078	1	0.780	1.319	0.189	9.186
Less administration – neutral	**-2.425**	**1.211**	**4.007**	**1**	**0.045**	**0.089**	**0.008**	**0.951**
Duration of working – 10 years or less	1.810	1.181	2.347	1	0.126	6.109	0.603	61.872
level of satisfaction in the last 2 years			13.676	2	0.001			
level of satisfaction in the last 2 years - Increased	**-1.983**	**0.910**	**4.751**	**1**	**0.029**	**0.138**	**0.023**	**0.819**
level of satisfaction in the last 2 years – Remained the same	**-3.311**	**0.897**	**13.627**	**1**	**0.000**	**0.036**	**0.006**	**0.212**
Volume of workload			4.367	2	0.113			
Volume of workload - not important	0.425	1.053	0.163	1	0.686	1.530	0.194	12.061
Volume of workload – neutral	**2.046**	**0.981**	**4.353**	**1**	**0.037**	**7.737**	**1.132**	**52.873**
Constant	-2.362	2.902	0.662	1	0.416	0.094		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, satisfaction levels in the last 2 years are compared to decreased level, duration of working are compared to more than 10 years, other factors are compared to important rating, Significant results in Bold

Appendix 20 Binary Logistic Regression Results - Leaving Primary Care Fourth Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	0.041	0.053	0.620	1	0.431	1.042	0.940	1.156
Health district			7.143	4	0.129			
Health district - A	-0.595	0.965	0.380	1	0.537	0.552	0.083	3.654
Health district - B	1.040	0.963	1.168	1	0.280	2.830	0.429	18.669
Health district - C	-0.436	1.044	0.175	1	0.676	0.646	0.084	4.998
Health district - D	-1.583	1.073	2.175	1	0.140	0.205	0.025	1.684
Kuwaiti Nationality	0.003	0.849	0.000	1	0.998	1.003	0.190	5.291
Male Gender	-0.021	0.760	0.001	1	0.978	0.979	0.221	4.343
Too much time spent on unimportant tasks			4.760	2	0.093			
Too much time spent on unimportant tasks – not important	-1.573	1.135	1.921	1	0.166	0.207	0.022	1.918
Too much time spent on unimportant tasks – neutral	**-2.567**	**1.269**	**4.092**	**1**	**0.043**	**0.077**	**0.006**	**0.923**
Poor flexibility of hours			0.871	2	0.647			
Poor flexibility of hours – not important	-0.893	1.379	0.419	1	0.517	0.410	0.027	6.113
Poor flexibility of hours – neutral	0.502	0.930	0.291	1	0.589	1.652	0.267	10.228
Potential introduction of 7 days a week working			0.406	2	0.816			
Potential introduction of 7 days a week working – not important	-20.511	8642.064	0.000	1	0.998	0.000	0.000	
Potential introduction of 7 days a week working – neutral	-0.629	0.987	0.406	1	0.524	0.533	0.077	3.691
Shorter clinic opening times			0.150	2	0.928			
Shorter clinic opening times – not important	-0.662	1.733	0.146	1	0.702	0.516	0.017	15.390
Shorter clinic opening times – neutral	-0.058	0.994	0.003	1	0.953	0.943	0.135	6.618
Less administration			4.315	2	0.116			
Less administration – not important	0.136	1.022	0.018	1	0.894	1.146	0.155	8.488
Less administration – neutral	-2.366	1.214	3.801	1	0.051	0.094	0.009	1.013
Duration of working – 10 years or less	0.853	1.047	0.664	1	0.415	2.346	0.302	18.253
level of work-related morale the last 2 years			6.230	2	0.044			
level of work-related morale in the last 2 years – Increased	**-1.806**	**0.897**	**4.057**	**1**	**0.044**	**0.164**	**0.028**	**0.952**
level of work-related morale in the last 2 years – remained the same	**-2.210**	**0.894**	**6.108**	**1**	**0.013**	**0.110**	**0.019**	**0.633**
Intensity of workload			5.628	2	0.060			
Intensity of workload – not important	-0.335	1.021	0.108	1	0.743	0.715	0.097	5.292
Intensity of workload – neutral	**2.178**	**0.990**	**4.842**	**1**	**0.028**	**8.826**	**1.269**	**61.406**
Constant	-0.631	2.940	0.046	1	0.830	0.532		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, satisfaction levels in the last 2 years are compared to decreased level, duration of working are compared to more than 10 years, other factors are compared to important rating, Significant results in Bold

Appendix 21 Binary Logistic Regression Results - Leaving Primary Care Fifth Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	-0.059	0.047	1.601	1	0.206	0.942	0.859	1.033
Health district			5.641	4	0.228			
Health district - A	-0.599	0.974	0.378	1	0.539	0.550	0.081	3.708
Health district - B	0.805	0.907	0.789	1	0.374	2.237	0.378	13.228
Health district - C	-0.644	1.063	0.367	1	0.545	0.525	0.065	4.218
Health district - D	-1.239	0.969	1.635	1	0.201	0.290	0.043	1.935
Kuwaiti Nationality	-0.843	0.810	1.084	1	0.298	0.430	0.088	2.105
Male Gender	-1.365	0.787	3.013	1	0.083	0.255	0.055	1.193
Too much time spent on unimportant tasks			2.914	2	0.233			
Too much time spent on unimportant tasks – not important	-0.243	1.062	0.052	1	0.819	0.784	0.098	6.283
Too much time spent on unimportant tasks – neutral	-1.966	1.156	2.896	1	0.089	0.140	0.015	1.348
Poor flexibility of hours			1.973	2	0.373			
Poor flexibility of hours – not important	-1.319	1.204	1.199	1	0.273	0.267	0.025	2.834
Poor flexibility of hours – neutral	0.413	0.773	0.286	1	0.593	1.512	0.332	6.877
Potential introduction of 7 days a week working			1.305	2	0.521			
Potential introduction of 7 days a week working – not important	-19.870	8969.095	0.000	1	0.998	0.000	0.000	.
Potential introduction of 7 days a week working – neutral	-1.107	0.969	1.305	1	0.253	0.331	0.049	2.209
Shorter clinic opening times			0.630	2	0.730			
Shorter clinic opening times – not important	-0.426	1.275	0.111	1	0.738	0.653	0.054	7.946
Shorter clinic opening times – neutral	-0.723	0.918	0.620	1	0.431	0.485	0.080	2.934
Less administration			0.436	2	0.804			
Less administration – not important	0.447	0.950	0.221	1	0.638	1.564	0.243	10.074
Less administration – neutral	-0.215	0.864	0.062	1	0.804	0.807	0.148	4.390
Duration of working – 10 years or less	-0.925	0.920	1.009	1	0.315	0.397	0.065	2.409
Current level of work-related morale			13.586	2	0.001			
Current level of work-related morale - low	**3.924**	**1.099**	**12.746**	**1**	**0.000**	**50.627**	**5.871**	**436.586**
Current level of work-related morale – neutral	1.276	0.668	3.651	1	0.056	3.581	0.968	13.250
Reduced volume of workload			2.727	2	0.256			
Reduced volume of workload – not important	-2.571	1.728	2.213	1	0.137	0.076	0.003	2.263
Reduced volume of workload – neutral	0.508	0.943	0.290	1	0.590	1.662	0.262	10.544
Constant	2.973	2.600	1.307	1	0.253	19.548		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, satisfaction levels in the last 2 years are compared to decreased level, duration of working are compared to more than 10 years, other factors are compared to important rating, Significant results in Bold

Appendix 22 Binary Logistic Regression Results - Leaving Primary Care Sixth Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	-0.061	0.047	1.672	1	0.196	0.941	0.857	1.032
Health district			6.059	4	0.195			
Health district - A	-0.754	0.976	0.597	1	0.440	0.470	0.069	3.187
Health district - B	0.852	0.899	0.897	1	0.344	2.343	0.402	13.655
Health district - C	-0.817	1.064	0.590	1	0.442	0.442	0.055	3.553
Health district - D	-1.174	0.970	1.464	1	0.226	0.309	0.046	2.071
Kuwaiti Nationality	-0.763	0.815	0.877	1	0.349	0.466	0.094	2.302
Male Gender	-1.379	0.780	3.124	1	0.077	0.252	0.055	1.162
Too much time spent on unimportant tasks			3.153	2	0.207			
Too much time spent on unimportant tasks – not important	-0.252	1.081	0.054	1	0.816	0.778	0.093	6.474
Too much time spent on unimportant tasks – neutral	-2.096	1.187	3.117	1	0.077	0.123	0.012	1.260
Poor flexibility of hours			2.357	2	0.308			
Poor flexibility of hours – not important	-1.551	1.248	1.544	1	0.214	0.212	0.018	2.448
Poor flexibility of hours – neutral	0.382	0.797	0.230	1	0.632	1.465	0.307	6.990
Potential introduction of 7 days a week working			0.771	2	0.680			
Potential introduction of 7 days a week working – not important	-19.807	8994.289	0.000	1	0.998	0.000	0.000	
Potential introduction of 7 days a week working – neutral	-.855	0.974	0.771	1	0.380	0.425	0.063	2.868
Shorter clinic opening times			0.543	2	0.762			
Shorter clinic opening times – not important	-0.034	1.271	0.001	1	0.979	0.967	0.080	11.672
Shorter clinic opening times – neutral	-0.640	0.898	0.508	1	0.476	0.527	0.091	3.062
Less administration			0.539	2	0.764			
Less administration – not important	0.562	0.967	0.338	1	0.561	1.755	0.264	11.674
Less administration – neutral	-0.159	0.858	0.034	1	0.853	0.853	0.159	4.587
Duration of working as family physician – 10 years or less	-1.021	0.929	1.208	1	0.272	0.360	0.058	2.226
Current level of work-related morale			13.496	2	0.001			
Current level of work-related morale - low	**3.916**	**1.094**	**12.801**	**1**	**0.000**	**50.181**	**5.875**	**428.645**
Current level of work-related morale – neutral	1.194	0.663	3.244	1	0.072	3.299	0.900	12.090
Reduced intensity of workload			2.915	2	0.233			
Reduced intensity of workload – not important	-2.990	1.765	2.871	1	0.090	0.050	0.002	1.597
Reduced intensity of workload – neutral	0.031	0.929	0.001	1	0.974	1.031	0.167	6.370
Constant	3.196	2.605	1.505	1	0.220	24.435		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, satisfaction levels in the last 2 years are compared to decreased level, duration of working are compared to more than 10 years, other factors are compared to important rating, Significant results in Bold

Appendix 23 Binary Logistic Regression Results – Years Planned to Work in Primary Care Model One

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	**0.091**	**0.031**	**8.314**	**1**	**0.004**	**1.095**	**1.029**	**1.164**
Health district			1.746	4	0.782			
Health district - A	0.024	1.211	0.000	1	0.984	1.024	0.095	10.992
Health district - B	0.372	1.017	0.134	1	0.715	1.450	0.198	10.639
Health district - C	0.555	1.499	0.137	1	0.711	1.742	0.092	32.899
Health district - D	1.113	0.963	1.337	1	0.248	3.044	0.461	20.087
Male Gender	0.277	0.691	0.160	1	0.689	1.319	0.340	5.113
Kuwait Nationality	**2.632**	**1.025**	**6.597**	**1**	**0.010**	**13.904**	**1.866**	**103.623**
Population covered by the centre			8.384	3	0.039			
Don not know	0.101	0.990	0.010	1	0.918	1.107	0.159	7.708
Up to 25000	**-2.533**	**1.224**	**4.280**	**1**	**0.039**	**0.079**	**0.007**	**0.875**
25001-50000	-1.580	1.041	2.303	1	0.129	0.206	0.027	1.585
Qualification			10.126	5	0.072			
Kuwaiti board of FM	**-4.094**	**1.856**	**4.867**	**1**	**0.027**	**0.017**	**0.000**	**0.633**
First part of FM board, MSc FM, or other FM or primary care qualification	**-4.999**	**1.705**	**8.602**	**1**	**0.003**	**0.007**	**0.000**	**0.190**
Other MSc qualification	-0.603	1.227	0.241	1	0.623	0.547	0.049	6.063
Diploma	-2.238	1.222	3.352	1	0.067	0.107	0.010	1.171
Medical degree	-2.018	1.168	2.986	1	0.084	0.133	0.013	1.311
Current level of satisfaction			10.127	2	0.006			
Current level of satisfaction– dissatisfied	**3.240**	**1.086**	**8.901**	**1**	**0.003**	**25.521**	**3.038**	**214.370**
Current level of satisfaction– neutral	-0.106	0.747	0.020	1	0.887	0.900	0.208	3.890
Constant	-3.552	2.251	2.490	1	0.115	0.029		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, satisfaction levels are compared to satisfied, population covered is compared to more than 50,000, qualification is compared to other., Significant results in Bold, FM= Family medicine

Appendix 24 Logistic Regression Results – Years Planned to Work in Primary Care Model Two

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	**0.133**	**0.042**	**9.945**	**1**	**0.002**	**1.142**	**1.052**	**1.240**
Health district			4.912	4	0.296			
Health district - A	0.190	1.261	0.023	1	0.880	1.209	0.102	14.325
Health district - B	1.265	1.229	1.058	1	0.304	3.542	0.318	39.413
Health district - C	1.457	1.709	0.727	1	0.394	4.295	0.151	122.366
Health district - D	**2.475**	**1.226**	**4.073**	**1**	**0.044**	**11.881**	**1.074**	**131.434**
Male Gender	1.557	0.800	3.787	1	0.052	4.744	0.989	22.760
Kuwait Nationality	**2.772**	**1.107**	**6.274**	**1**	**0.012**	**15.997**	**1.828**	**140.008**
Population covered by the centre			8.223	3	0.042			
Don not know	1.859	1.145	2.634	1	0.105	6.417	0.680	60.568
Up to 25000	-1.105	1.217	0.825	1	0.364	0.331	0.031	3.594
25001-50000	-0.694	0.921	0.569	1	0.451	0.499	0.082	3.036
Qualification			10.492	5	0.062			
Kuwaiti board of FM	**-5.607**	**2.174**	**6.651**	**1**	**0.010**	**0.004**	**0.000**	**0.260**
First part of FM board, MSc FM, or other FM qualification	**-5.234**	**1.758**	**8.862**	**1**	**0.003**	**0.005**	**0.000**	**0.167**
Other MSc qualification	-1.230	1.325	0.862	1	0.353	0.292	0.022	3.921
Diploma	-1.901	1.189	2.555	1	0.110	0.149	0.015	1.537
Medical degree	-2.759	1.284	4.616	1	0.032	0.063	0.005	0.785
level of satisfaction in the last 2 years			12.156	2	0.002			
level of satisfaction in the last 2 years - Increased	**-4.675**	**1.485**	**9.910**	**1**	**0.002**	**0.009**	**0.001**	**0.171**
level of satisfaction as in the last 2 years – Remained the same	**-3.976**	**1.193**	**11.101**	**1**	**0.001**	**0.019**	**0.002**	**0.195**
Constant	-4.118	2.329	3.127	1	0.077	0.016		

Note= health districts are compared for health district E, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis, satisfaction levels are compared to satisfied, population covered is compared to more than 50,000, qualification is compared to other., Significant results in Bold, FM= Family medicine

Appendix 25 Binary Logistic Regression Results – Retirement Intention Model

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	0.051	0.043	1.436	1	0.231	1.052	0.968	1.144
Health district			2.737	4	0.603			
Health district - A	-0.148	0.993	0.022	1	0.882	0.863	0.123	6.046
Health district - B	0.678	0.874	0.601	1	0.438	1.970	0.355	10.933
Health district - C	-0.581	1.288	0.204	1	0.652	0.559	0.045	6.979
Health district - D	-0.701	1.031	0.461	1	0.497	0.496	0.066	3.746
Male Gender	-1.086	0.747	2.113	1	0.146	0.338	0.078	1.460
Kuwait Nationality	0.513	0.816	0.396	1	0.529	1.671	0.338	8.269
Ill health			7.314	2	0.026			
Ill health – not important	**1.582**	**0.706**	**5.027**	**1**	**0.025**	**4.864**	**1.220**	**19.389**
Ill health – neutral	-0.934	1.172	0.635	1	0.425	0.393	0.040	3.906
Working for 10 years or less	-0.856	0.895	0.914	1	0.339	0.425	0.074	2.457
Constant	-4.522	2.632	2.952	1	0.086	.011		

Note= health districts are compared for health district E,, gender is for males compared to females, nationality is for Kuwaitis compared to non-Kuwaitis ill health are compared to important rating, duration of working compared to working for more than 10 years, Significant results in Bold

Appendix 26 Interview Topic Guide

Gender	Age
Rank	Nationality
Area	Duration of work as a GP

- How satisfied are you with your work as a GP?

- Have you thought about leaving? Why?

- Individual factors?

Gender	
Values & beliefs	
Health	
Ability & disability	
Interests	
Age	
Knowledge & skills	
Self-concept	

- Social system Factors?

Education Institutes	Postgraduate:
	Med school:
	Other: courses
Community groups?	KMA?
Peers	
Family & friends	

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6. Social system Factors – Workplace?

Working hours	
Work-life balance	
Patients demands & relationships	
Communication with hospitals	
Structural (buildings)	
Workload	
Rank	
Leaves & career break	
Rules & regulations	

- Environmental & societal?

Political Decisions	
Employment market	
Socioeconomic status	Income
	Pension
	Other

Historical trends & globalisation	

- Recommendations and policy changes

Appendix 27 Example of A Mind Map Created for The Analysis of Interviews